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you get the most out of your existing programs!**

ST SOURCE

*... the source of all information! This is where you'll find our short reviews,
the best tutorials, your opinions and answers to your questions...*

*Improve
your
knowledge
with
Beat The
System on
page 82!*

*Learn how to loop sounds with our
Replay Stereo tutorial on page 88.*

FEATURES

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INFORMAL

Outspoken to a man…

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GRAHAM GOOCH SECOND INNINGS OFFER – SEE PAGE 60
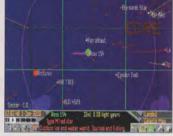
SCREEN SCENE

Time for a bit of joystick waggling!

Is Elite II the best ST game of all time? Judge for yourself with our full review on pages 58 and 59…

ON THIS MONTH'S COVERDISK

K-RESOURCE

… a commercial resource construction program. Add menus and dialogue boxes to your own C or BASIC programs or customise your favourite applications! Our tutorial starts on page 10.

KANDINSKY

Superb shareware vector graphics program – exclusive to *ST Review's* cover disk! And our two page tutorial starts on page 14.

Plus see page 13 for…

Selectric – the best file selector ever! Another *ST Review* exclusive.
Teradesk – excellent replacement desktop.

EDITORIAL POLICY

What makes you pick up ST Review and buy it? The cover disk? In part – especially if we happen to have a good piece of commercial software. The features? Yes, if they happen to be in your area of interest. But if you're like me, you probably buy your favourite mag to find out what is new and whether to buy it.

The review side of a magazine is highly important. As ST Review is in a competitive market, I try to ensure that we bring you the most accurate review of a product as soon as it becomes available. In this way you know that you can rely on the unbiased nature of our reviews, and can clearly decide whether or not a new piece of software or equipment is for you.

If we write about a product that hasn't been fully completed yet, the piece is clearly labelled as a "preview". In this case, I strongly advise you to wait until we review the product properly; never purchase on the strength of reading a preview as there is no guarantee that all the features we have alluded to will actually be available on the release version.

Another case where a preview may be presented is when the program has been obtained from a foreign country such as Germany. In this case, we are unlikely to have been given a manual and most of the dialogue boxes will have text in a foreign language. Again, we cannot be certain how the final English version will turn out.

We live in an imperfect world where decisions sometimes have to be made according to shades of grey, not pure black and white. There have been occasions in the past where ST Review has been misled by distributors as to the true state of a product and have reviewed it in good faith only to find that it is not the release version. This will probably happen on rare occasions in the future, but rest assured that we have a firm policy on editorial coverage and will continue to bring you the best reviews, previews and features as only our writers can.

On an entirely different matter, there is no One Man & His ST in this issue because I'd like to change the style a little and need your help. If you use your ST, TT or Falcon for an interesting purpose, I want to hear about it and then follow up with an interview for which ST Review will pay £50. If it in is the obvious areas such as DTP or music, there has to be an interesting twist!

I'd also like to introduce a new American Pie writer. Dave Munsie is now contracted to a video games company and so can no longer write for ST Review, but his place has been taken by Charles Smeton, author of the STraight FAX software. I think we can look forward to quite an insight into Atari in the USA.

Finally, are you having problems getting hold of ST Review? If so, pop down to your local W.H. Smith's which should definitely have us on its shelves. If not, give me a call on 0625 878888...

Vic Lennard
Editor

Growing grey market in Britain as public clamour for the Jaguar...

Hot demand – a grey imported Jaguar could set you back up to £400...

The Jaguar looks set to become the most successful games console of all time after taking a record four major awards at the recent Consumer Electronics Show in Las Vegas, USA. However this has led to an unparalleled level of demand in America, with over 20,000 machines being sold in the three weeks leading up to Christmas, and the cancellation of the proposed UK launch date of the 15th March. "The UK launch of the Jaguar has been put back until later in the year when there are decent supplies available in the UK." commented a spokesperson for Atari UK.

The intended UK distribution of thousands of consoles before Christmas failed to materialise, with only a small number reaching HMV and Virgin on the 23rd December. A spokesman for Thornley, the official UK distributor, commented that "we have no idea when to expect the next consignment".

The unfortunate upshot of this is a growing market of grey imports, with Jaguars currently changing hands in the UK for up to double the recommended retail price of £199 and games such as *Crescent Galaxy*,

> *The uptake of interest in Jaguar has been amazingly fast... those people who have ordered early will be supplied on a first-come, first-served basis.*
>
> Darryl Still,
> Marketing Manager,
> Atari UK.

Raiden and *Evolution Dyno-dudes* costing up to £80 each. "We have someone in America buying them over the counter and paying full price which is why they're so expensive." justified one of the grey importers.

TAKING A GAMBLE

Jaguars intended for the American market are designed to be connected to an NTSC television as used in the USA and cannot simply be plugged into a UK television set. Grey importers are getting around this by including a special connection lead for UK televisions with a SCART

High price – an imported copy of Crescent Galaxy could remove £70 from your wallet...

UK LAUNCH DELAYED

socket. Alternatively many colour monitors, such as the Philips CM-8833, can be connected directly.

The risks associated with such a grey purchase are high. Should the Jaguar break down, the purchaser will have to rely on the importer sorting out the problem as there will be no warranty through Atari UK – and the technology behind any newly launched machine often leads to higher failure rates than for established units.

Another consideration is that true export games cartridges will be of the "world title" type and will play accurately on exported Jaguars while imported American titles may have problems. For instance, the US-specific version of *Raiden* has an on-screen border when used with an imported US machine connected to a UK television.

Peter Walker, Atari UK's public relations officer commented: "The company recognises that the overwhelming demand for the Jaguar in Europe has led to enthusiasts willing to pay up to double the price. Atari UK regrets this and will not be able to catch up with demand until after the official launch later this year. However, we are in the process of setting up a consumer hotline to advise the public of which retailers have Jaguars in stock."

CONTINUED DEVELOPMENT

More details of development on the Jaguar are starting to emerge. Activision's *Return to Zork*, a current big seller on the PC, is to be released on the Jaguar later this year. Microprose have teamed up with Atari to produce military simulations for the Jaguar and have already started work on a Jaguar version of their highly acclaimed *Gunship 2000* simulator. Finally, Atari are to publish a virtual reality 3D game called *Doom: Evil Unleashed*, by the team behind *Wolfstein 3D*.

In common with all other games consoles, Jaguar software must be developed on "real" computers and ported across in a similar manner to

that adopted by Sega and Nintendo. Jaguar development kits are currently only available for the TT, PC and Apple Macintosh. Atari Corporation's Bob Brodie recently said that there was already a TOS-based development system for the Jaguar (the TT version) and it was "quite logical to assume that it will be ported to the Falcon".

Padded up – an extra control pad can cost up to £60 through the grey market.

JAGUAR BREAKS RECORD AT US SHOW

Las Vegas recently played host to the Consumer Electronics Show (CES) where the Jaguar picked up four of the five major industry awards, including *Best New Game System*, breaking the previous record held by Nintendo of three awards.

"We are excited that the industry's premier publications have recognised Jaguar," said Sam Tramiel, president of Atari. "It is an honour to know that the leading trade magazines and their readers recognise our efforts."

Also on show were late test versions of many games that will be launched through 1994 including *Checkered Flag*, which now includes rain and foggy weather conditions, *Kasumi Ninja*, featuring 91 martial arts movements, and the virtual reality-stretching *Alien v Predator*, probably the most sought-after title of all.

Chris Gore, editor of *VideoGames Magazine* said:

"Atari developed a new game system with innovative hardware and software that delivers a performance level currently not available in the market at a price people can afford. It eclipses 3DO as the best bang for your buck."

Nearly there – Checkered Flag now includes rain and fog conditions...

THE AWARDS...

Best New Game System
Best New Hardware System
1993 Technical Achievement Of The Year
1993 Best Print Advertisement

Winning ad – Atari's Jaguar advert picked up a major award at CES.

NEWS
HISOFT POWER

ATARI RETREAT ON ST

After previous announcements that the Atari ST would no longer be built, the machine appears to be safe for 1994. With a backlog of orders from around Europe, and a reasonably high level of ongoing demand, Atari has decided that the removal of the ST from its books would not be in its best interests.

As most of the demand is localised, Atari is intending to reman-ufacture the ST in Europe rather than the Far East. At the time of going to press, it was difficult to ascertain whether the STFM or STE would be supported, but it is expected to be the latter. Could this lead to the emergence of a *Family Curriculum 3* pack?

HiSoft have just released four new products, with probably the most exciting announcement being that *AtariWorks* is now on sale in the UK. The package features an integrated word processor with spell checker and thesaurus, spreadsheet with full graphic capabilities, and an extensive database. Since this is an integrated package, data can be cut and pasted freely between the three modules. The program requires 2Mb of memory and a hard drive. *AtariWorks* costs £129.95 with *SpeedoGDOS* or £99.95 on its own.

Clarity is a sound sampling pack-age for the Falcon. It consists of a sample editor and drum sequencing program along with a hardware module that plugs into the cartridge port, allowing you to sample at CD and DAT frequencies. All filtering is done by the Falcon's DSP – an opera-tion previously taking 20 minutes is now completed in about 12 seconds. Clarity is available now at a cost of £99.95 – full review next issue.

A Falcon-specific version of Microdeal's *VideoMaster* hardware/software package recently went on sale. It digitises video animations in 64 grey levels at a speed of 25 frames per second, giving results on a par with black and white film. Colour stills are supported at a resolution of 640 by 480 pixels in True Colour via the ColourMaster RGB splitter. Full 16-bit stereo sound is supported through the Falcon's hardware and can be added to digitised animations using the built-in sequencer. VideoMaster Falcon costs £99.95,

Sound choice – the Clarity sampling system for the Falcon is now available.

complete with HiSoft's *TruePaint*. The ColourMaster RGB splitter costs £69.95 on its own but is available with VideoMaster in a combined package called VideoMaster RGB Falcon for £139 – full review starts on page 17 of this issue.

DevpacDSP is a complete editor, assembler and disassembler for the Motorola DSP56001 used in the Falcon030. The assembler supports macros, conditional assembly, include files and direct production of LOD files or Falcon binary. The debugger is also GEM-based and allows you to disassemble and step through code, setting breakpoints, modifying registers and more. Although *DevpacDSP* can be fully integrated into the main *Devpac 3.10* shell for ease of use, it is a stand alone product in its own right, specifically designed for writing and debugging DSP code. *DevpacDSP* £59.95 for the complete package, or £69.95 including Motorola's publication on programming the DSP.

Harlekin 3 is now available at a cost of £59.95. This latest upgrade to the multi-functional desk accessory features a number of improvements over *Harlekin 2*, including a multi-file editor, high density disk support, separate keyboard and font editors and a new communica-tions module. *Harlekin 2* users can upgrade to the new ver-sion by returning the original disk and manual to HiSoft along with an upgrade fee of £19.95. HiSoft can be contacted on 0525 718181.

Jack of all trades – Harlekin 3 now includes a multi-file editor and comms module.

TWO FROM TITAN

Titan Designs is about to release two new Falcon packages, each priced at £39.95. Both products are from Black Scorpion Software, the team behind Floppyshop's forthcoming integrated Falcon graphics package, *ChromaStudio 24*.

BSS Debug is a 68030 Falcon-specific symbolic debugger. The program is primarily mouse-based with keyboard shortcuts for almost every option and conforms to the keyboard controls used by HiSoft's *MON*, wherever possible. *BSS Debug* will be available within the next few weeks.

DEXtrous provides every function available on the Desktop plus a host of extras. Various modules allow you to move through directories, performing any of the supported functions as required, organise files into logical directo-ries in a similar manner to the Windows Program Manager on the PC and view GIF, TIFF and TGA graphic files as well as CFN and GEM fonts. The Falcon version will be available shortly; an ST version is under consideration. Contact Titan Designs Ltd on 021-414 1630.

ST REVIEW HOTLINE

ST Review's hotline is now up and running. If you have any cover disk or technical enquiries, call 0625 859766 between 2pm and 5pm on Fridays. Unfortunately, technical queries cannot be answered outside of these hours.

IN BRIEF

● **Hands On MIDI Software Ltd (0705 783100) has moved to a purpose built suite of offices in Waterlooville. "Our continued growth, which has necessitated this move, has proven beyond all doubt that we remain the leading supplier of MIDI files," said managing director, Dave Clackett. Hands On has also imple-mented a BBS to enable registered users to download files directly.**

● **Gremlin Graphics are currently having discussions with certain undisclosed big names in Hollywood regarding their computer games heroes, Zool and Litil Divil. The intention is to get Zool onto both TV and film, with Litil Divil making it into an animat-ed feature film. All being well, our heroes should make their film debuts some time next year. Gremlin's David Martin said: "It's great news, but really we're not that surprised. We proved with Zool that great characters can go all the way!".**

● **Microdeal Ltd officially closed down just before Christmas, with its remaining stock auctioned off on 18th December. The com-pany had been winding down its operations over the past twelve months and as a result had sold the Microdeal name, the distribution rights to their products and their packaging plant to HiSoft several months ago. The Microdeal name will remain in use on a number of HiSoft's top products.**

● **A third series of Yorkshire TV's computer games show *Bad Influence* is scheduled to begin on 8th September 1994 and run for 15 weeks. The show has been particularly successful, attract-ing over four million viewers in the 13 – 15 age group. YTV are currently considering a live Sunday morning edition to run alongside the mid-week series to look at some of the topics covered by the Thursday show and feature some sort of phone-in where viewers can win prizes.**
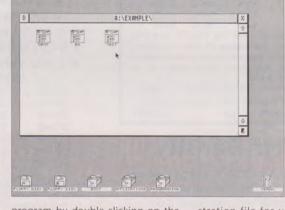
HOW TO BE RESOURCEFUL!

Ever fancied customising your favourite software? Or adding menus and dialogue boxes to boring TOS programs? You need K-Resource and it's on the cover disk! Jon Ellis leads the way...

The K-Resource desktop. Notice the names for the disk icons – these are taken from your DESKTOP.INF file!

K-Resource is one of the most widely used resource editor programs. These deal with the creation and manipulation of resource (.RSC) files which form an essential part of many GEM applications. A resource file contains the information for dialogue boxes, menu bars and so on.

Even if you're not a programmer, K-Resource can come in handy. With a little care, you can edit existing resource files. This can be very useful for translating the GEM interface of German PD programs...

UP AND RUNNING

Enough of an introduction, let's see K-Resource in action. Fire up the

program by double-clicking on the NRSC.PRG icon. After loading, you'll be presented with a desktop-look-alike, with a line of icons representing the disk devices and a trash-can.

The K-Resource desktop works in a similar way to the normal desktop. Double-clicking on a device icon causes a directory window to be opened; dragging something to trash deletes it. The window contains icons representing folders and .RSC files. Only .RSC files are displayed, as these are all that the program can process.

To enable you to get a feel for how resource editing works, the cover disk contains a specially prepared demon-

stration file for you to play with. Double-click on the EXAMPLE folder icon, and then load in the DEMO resource by dragging its icon onto the K-Resource desktop. This results in a second window being opened to display the contents of the file.

In this case, the file contains a single object tree called FILESEL – if you're puzzled by the jargon, have a look at the box for an explanation. Other resource files may have lots of trees, in which case the window would be full of icons. Double-click on the object tree and the tree will be displayed: a complicated dialogue box designed as a replacement file selector.

As you move the mouse over the dialogue box, you will notice a black square following the mouse pointer. The black square indicates the bottom right-hand corner of the object under the mouse. Each object in a tree has a number, and an optional name – these are displayed in the menu bar and change as the mouse is moved.
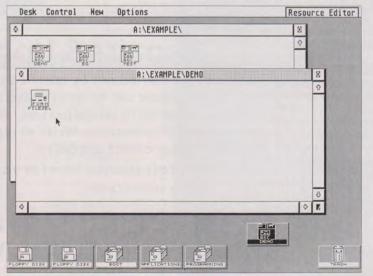
To edit an object, simply double-click on it. K-Resource will display a dialogue box which allows you to alter the appearance of the object. Try this yourself – double-click on the "Centred Title" object at the top of the dialogue. K-Resource will display a dialogue box allowing various properties of the object to be altered.

Effects such as shadowing and outlining can be applied simply by clicking on the appropriate buttons.
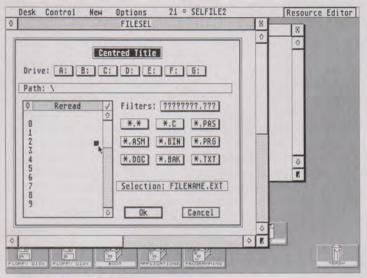
GETTING STARTED

This is really easy as K-Resource is not a fussy program.

● **Use STRBAKUP.TOS to copy the cover disk, and then delete everything on the backup disk apart from NRSC.PRG and the EXAMPLES folder.**

● **That's it – you now have a working disk!**

Opening a resource file reveals the object trees inside.

An object tree in the editor.

A new dialogue box under construction showing the new object part-box in use.

Text can also be changed using the editable field at the bottom of the box. Try using the dialogue to change the title object's text to, say, "File Selector". Press OK to apply your changes to the object. If the title now appears to be in the wrong place, simply click on it and drag it with the mouse to the right position. Objects can be resized by clicking on the bottom-right corner and dragging until the desired size is obtained.

NOT JUST A PRETTY FACE

A resource file object is not only described by how it looks, but also by what it does. Some objects can be selected by clicking with the mouse, and others do nothing. Some strings of text can be edited, and others not. These interactive properties can be set using buttons in the object editing dialogue.

Making an object **Selectable** causes it to invert colour when clicked on. An object with the **Exit** property ends the dialogue interaction when it is selected. Cancel buttons in most dialogue boxes have this property.

K-Resource will let you test your dialogue boxes. Go back to the window that displays object trees. Single-click on the FILESEL icon, and then choose **Test** from the dialogue box that is displayed. *K-Resource* will

then allow you to interact with the box until an **Exit** object is activated.

MAKING A NEW START
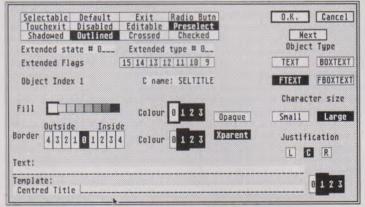
To create a new resource file, click the right button with the mouse over the empty desktop. A part-box will appear containing icons for resource files and folders. Drag a resource file onto the desktop, and then give it a name. To add a new tree to a resource file, click the right button over an open resource file window, and drag an icon from the part-box into the window.

In a similar fashion, new objects can be added to a tree by clicking the right button over an open tree window, and dragging an object from the object part-box into the tree.
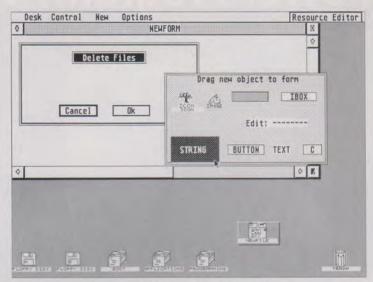
Menu options are also available to do these tasks. Once your new masterpiece has been created, it can be saved to disk by dragging the resource file icon into a directory window.

OVER TO YOU...

This brief introduction has just scratched the surface of what *K-Resource* and resource files can do. Hopefully though, it will have whetted your appetite for further experimentation. Much more detail on the operation of the program,

including many facilities not touched on here such as the icon editor, can be found in the *K-Resource* manual.

If you have been following *ST Review*'s series on C or BASIC, these tutorials will soon show you how to use *K-Resource* to design and animate

dialogue boxes and menus for your own programs. Many good ideas on how to make particular "set-pieces" of dialogue box design, such as scrolling list boxes and the like, can be found by browsing through the .RSC files that accompany PD programs...

JARGON JOGGER

Like many other areas of programming, the resource file field is littered with its own jargon which makes getting started difficult. To give you a head-start on the technical terms, and to explain how *K-Resource* works, we'll have a quick look into the depths of the resource file.

The fundamental unit of resource file data is the object. There are many different types of object: strings, boxes, strings with boxes around them, buttons, icons, editable fields and so on.
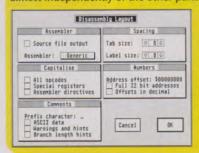
Some of the more commonly used object types.

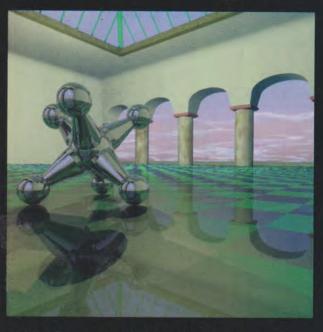The basic appearance of these objects can be modified by the application of effects such as shadowing and outlining. Also, objects can be given different colours, filled with various patterns and so on. Objects are grouped together into trees. A dialogue box, or form, is usually made up of a single tree of objects. Likewise, a menu bar is also a tree of objects – one conforming to certain rules about the type and arrangement of objects.

A tree is formed by arranging the component objects in a hierarchy. In a dialogue box, the outer box is the parent of all the objects contained within it. These objects are called the children of the outer box. Child objects can also have their own children, and so on. This apparently complicated arrangement allows one part of a tree to be processed almost independently of the other parts for extra flexibility.

A complicated dialogue box showing the relation between objects. All are children of the outer box. Each of the white boxes is a G_BOX object with its own children – the square selectable buttons, and the explanatory text strings.

The editing dialogue for G_TEXT and related objects.

Power Programs Without The Price

Inshape

Inshapes begins with the modeller, which has a variety of tools such as spin, extrude, and a template editor. Many built in primitives like cube, sphere, disc, cylinder, and tube are also included. Models can be assembled from component objects using up to 16 layers. Manipulation tools means an object can be moved, rotated, scaled to an accuracy of 0.0001mm. A wide range of materials are provided including metals, stones, plastic, wood, glass and sand. Many textures are available from marble to multi coloured spots. Even features such as bump mapping, image mapping, and waves are possible. Models can be illuminated, positioned and animated in the scene editor which in turn is your 3D world.

"A feature-packed modelling package that deserves to take the market by storm."

David Nilson. ST Review December 1993.

"It's the best there is."

Clive Parker. ST Format February 1994.

DA's Vector and DA's Vector Pro

The essential graphics, animation and presentation tool.
DA's vector is a colour vector graphics program for any Atari ST(E)/TT and Falcon computer, with at least 2MB of memory.
Unfortunately, we don't have sufficient space on this page to list the 100's of features included, like the tracer, vectorpath editor, 3d extruder, vector morphing, keyframe animator, graph and chart generator, picture converter, colourfade generator, freehand bezier drawing, to name but some of the features that combine to make this program not so much a tool as a fully equipped graphics workshop. And now the best is getting better with DA's Vector Professional's added abilities. Phone for further information, also details on the excellent Tutorial which is now available.

"If we were to pick just one winner, without doubt this would be it."
Atari ST User 1993 Awards.

DA's Picture

The brief was simple: "Develop an image retouching program with more power than Retouche Professional and be easy to use." The result "DA's Picture".
DA's Picture is the most recent member to the Digital Arts family of acclaimed products, and a software hardware bundle is available with the Matrix Screeneye Digitiser.
DA's Picture Software £149.00 inc. VAT.

Please note that InShape requires a maths co-processor and works with an Atari TT or Falcon, priced at £149.00. DA's Vector is £149.00 and DA's Vector Pro is scheduled to be approx £249.00. Chagall Limited is £149.00. The Tabby Graphics Tablet is £49.95 and DigiTape Lite is on special offer at £99.00 with a copy of this advertisement, until Feb '94. CGS ComputerBild may be contacted on 081 679 7307 for orders and further information, or write to us at: 231 Northborough Road, Norbury, London SW16 4TU.

TWO INDISPENSABLE UTILITIES...

*This month we have two of the best ST utilities –
Selectric, the replacement file selector, and
TeraDesk, a replacement desktop. Both work
on all systems, in any resolution and require
very little memory or disk space...*

SELECTRIC

SYSTEM UTILITY • SHAREWARE • BY STEPHAN RADERMACHER • ALL RESOLUTIONS

*Probably the best file selector
for the ST...*

The Atari file selector was unique when first released
with TOS 1.00 in 1985. Unfortunately, Atari have
done little to improve it since, except adding the
drive selection buttons in TOS 1.04. Enter *Selectric*
which now enjoys the support of more than 1200
registered users.

The package consists of *SLECTRIC.PRG* which must
be copied to your AUTO folder. There is also a desk
accessory which lets you call the file selector at any
time, and a CPX module for the Atari *Control Panel*
which does the same but can also disable *Selectric* if
you ever need to use the standard file selector. Reset
the system to activate *Selectric*.

It follows the standard file selector in operation,
so learning to use it is quite easy. Files are selected
by pointing and clicking, and you can change the
current drive by clicking on the single drive button.
This displays a pop-up menu showing all available
drives. Simply click on the one you want.

A host of facilities are available by clicking on the
Functions button. You can delete, copy, move and

*Selectric
supports
wildcards –
very handy
once you get
the hang of it!*

rename any selected file. If needed, several files may
be selected at once by holding down the <Shift> key.
The New Item option lets you create new folders and
Find is used to search your drive for any file, including
the use of wildcards. For instance, to find any file that
has the extension .DOC, simply enter *.DOC in the
search pattern line.

Selectric displays files sorted by name by default.
This can be changed by clicking on the appropriate
button. You can view files by size, date, or type, and
even reversed order. *Selectric* can even find a file if you
type in the first one or two letters of the file name. If
the file is found in the current path, the display will
scroll and the file will be selected.

Don't forget that *Selectric* is supported shareware in
the UK. Check the info file and send off your money...

TERADESK

SYSTEM UTILITY • FREEWARE • BY WOUT KLAREN • ALL RESOLUTIONS

*Replace the boring Atari
desktop with this fast,
powerful alternative...*

TeraDesk replaces the Atari desktop with a much more
versatile one. Unlike other desktop replacements, it
requires very little memory and best of all – it's free.
You can run *TeraDesk* directly from the desktop by
double-clicking on *DESKTOP.PRG* in the *DESKTOP* fold-
er. If you want *TeraDesk* to run automatically whenever
you start the system, follow this procedure:

● Select *DESKTOP.PRG* so that it appears in inverse.
● Select **Install Application** from the Options
  menu on the desktop.
● Set boot status to "Auto" in the dialogue box.
● Exit the dialogue box by clicking on "Install".
● Select **Save Desktop** and click on "OK".

*Selectric looks much nicer than the
standard file selector and has many
useful features. The Auto Locator
selects a file if you type in the first
letter of the file name and the cursor
keys are used to change the selection.*

STRBAKUP

DISK BACKUP • EXCLUSIVE UTILITY BY OFIR GAL • MEDIUM/ HIGH RES

Back up your cover disk and keep the
original in a safe place.
Run the program and follow the
on-screen instructions. There is
no need to format your backup disk
as the program will do this for you.
STRBAKUP.PRG is for backing up
your cover disk. We do not
recommend it for any other use.

This applies to all Atari computers with TOS 1.04
or later. If you have an earlier TOS version you will
have to use an additional program like *GEMSTART*
which is available from most PD libraries.

TeraDesk operates much like the standard desk-
top but has many enhancements. You can drag
programs onto the desktop and assign icons to
each program. Much like the desktop found on
TOS 2.00 and later, files can be dragged onto a
program icon which loads the program and then
loads the file into the program. You can even drag
multiple files, although this only works with
applications that support this feature.

*TeraDesk
has a built-
in file viewer
and can use
GDOS fonts
to display
directories
and text
files.*

*The Install
Application
dialogue box has
many advanced
features such
as multiple file
types and GEM .*
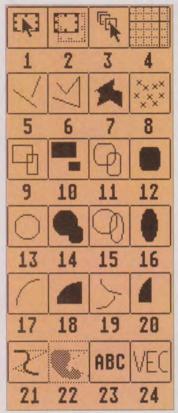
*Choose the type of dialogue boxes used
and whether they appear at the centre
of the screen or wherever the mouse
happens to be. All dialogue boxes also
feature convenient keyboard shortcuts.*

KAN!

Joe Connor and Keith Berry get you started with Kandinsky, a superb vector graphics package...

8 **Markers**: a polyline with invisible lines; mouse clicks set corner markers.

9-12 **Rectangles**: left click to set the first corner, and again to complete the rectangle.

13-16 **Circles/Ellipses**: left mouse click to set the centre point; left click again to complete.

17-20 **Circular/Elliptical arcs**: each command takes four left mouse clicks to complete – centre point, radius, start angle and end angle. Zero degrees is always at the three o'clock position and angles are counted anti-clockwise.

21-22 **Bézier curves**: converts polylines into curves. The first and second mouse clicks define the start and end points; the third and fourth points define the shape of the curve.

23/24 **Text/Vector text**: a left mouse click enables text entry; a second left click sets it. In text entry mode (after the first click) it's possible to use the GEM Clipboard, "Cut", "Copy" and "Paste" options.

REGISTRATION

Support for *Kandinsky* in the UK is provided by Joe Connor who recently set up a non-profit making scheme to provide translation, local support and registration facilities for a gradually expanding range of quality German products.

The scheme deserves support so if you'd like to see more quality shareware releases in English, register! Apart from that nice warm feeling inside you'll receive:

● **The latest registered version of *Kandinsky* including a personal key to remove the registration dialogue box and unlock the registered user-only features.**
● **Disk-based manual explaining in detail how to set up fonts and print out using *GDOS* along with a complete reference guide to each command.**
● **Nine more BGI format vector fonts and a selection of *GDOS* screen fonts.**
● **Enhanced zoom tools, offering total control over the drawing window.**
● **Object rotation to an accuracy of one-tenth of a degree.**
● **PostScript Export option, for compatibility with PC and Mac applications.**

To register your copy send a Cheque or Postal Order for £15 (£17.95 if you would like a copy of *GDOS*; please specify your printer type) to: Joe Connor, 65 Mill Road, Colchester, Essex, CO4 5LJ.

SpeedoGDOS is available from HiSoft (Tel: 0525 718181) and *GDOS* from The ST Club (Tel: 0602 455250).

3 *Your mountain range drawing now appears as solid black filled. From the Attributes drop-down menu select "Filling..." (or just press <Alt>+<U>) and experiment with the types of fill, patterns or colours that are available to you. Here a grey scale value of 47 without Perimeter (outline) has been chosen.*

4 *In the same way, three more mountain ranges have been added, each with a progressively darker greyscale fill to create an aerial perspective effect. Using the Move Object tool, each range may be moved around the screen (left-click inside the object, left-click at destination), or reshaped using small boxes.*

5 *Some foreground bushes have been added using the filled ellipse tool. With the Select Object tool selected, <Shift> and left click on each ellipse so that it is surrounded by a box. From the Object(s) menu select "Group" (or press <Alt>+<B>) and they become a single object for easier editing.*

6 *With this new object selected, click on "Shadow" from the Attributes menu for a range of fills, patterns and colours for a shadow. The position and size/depth of the shadow is dependent on your chosen settings in the X- and Y-Distance boxes.*

7 *The unregistered version of Kandinsky has the Zoom functions disabled, but you can adjust the magnification of your picture by selecting "Page Format..." from the File menu. Experiment by either altering the Enlargement/Reduction percentage or adjusting the page size.*

8 *Although the menu arrangement makes using Kandinsky in low resolution difficult, it is possible to assign different colours to objects. Use <Alt>+<F> to adjust the Fill colours and <Alt>+<C> to change their outline colours. Easy Draw .GEM files can be loaded and coloured too.*

FALCON GOES TO HOLLYWOOD

Lights, camera, action! Maurice Collins tries out the new Falcon specific version of Microdeal's colour video digitiser, Videomaster.

While Atari wasted no time in shouting "multimedia" from the rooftops when the Falcon was launched, the sad truth was that there just wasn't that much media to shout about. Sure, there was sound, text and graphics – but what about video?

Never popular on the ST, partly because of the price and partly because of the ST's inability to display more than 16 colours, it was never really taken seriously. Hopefully, the Falcon will change that.

Digitised video sequences can be used in all sorts of ways – for instance, as introductions to your own games or programs, combined with text and graphics into clever demos you can give to your friends, or simply as rolling demos and advertisements for your products or services. Video digitisers can also double as cheap colour scanners – you can use them to grab single frames and save them as bitmap graphics files for inclusion in adverts, posters and other desktop published documents.

You can edit digitised sequences in all sorts of ways. Using the Falcon's unparalleled sound capabilities you can record voiceovers or add musical sound tracks. You can also edit each frame, flipping or reversing them individually or in sequence, adding or removing frames, altering the colour palettes and even overlaying text or graphics onto them using suitable software such as *TruePaint* which is supplied with the *Videomaster* package.

To say that you are limited only by your imagination is a rather well-worn phrase but it happens to be perfectly true...

HARDWARE

The video digitiser element of the Microdeal system is called *Videomaster*, a simple plug-in cartridge that accepts video input from virtually any source. It comes with an audio adapter lead so that stereo sound can be sampled direct from a video, camera or other sound source.

Microdeal also sell *Colourmaster*, an RGB colour signal splitter costing £69.95 that integrates with *Videomaster* to automate the colour digitising process and allow stills to be grabbed from recorded video. *Videomaster* and *Colourmaster* are available together, in a package sold as *Videomaster RGB*, for just £139.95.

The dark grey *Videomaster* cartridge, some five and a half inches long by three inches wide, fits neatly into the Falcon's cartridge port. It contains two thin black control knobs, for brightness and contrast, and a single phono-style input socket for the composite video signal. No leads are supplied for connection to the video device but the worst case scenario is a trip to your local electrical retailer for a set of inexpensive leads. I tried out *Videomaster* with a Matsui VCR and a Sony camcorder – the latter, a professional model, was already equipped with all the correct leads while the VCR worked perfectly with a set of phone to phono leads borrowed from a hi-fi.

Depending on the nature of your equipment, a sound source can have a single line out or two separate ones for each stereo channel. Using the adapter provided with the package, it can be fed straight into the Falcon's rear microphone socket. If the *Colourmaster RGB* splitter is being used, things are complicated slightly. The light grey splitter becomes the initial input device which is then connected to the *Videomaster* cartridge but there are additional leads, one to the printer or parallel port and the other to the second joystick port (used as a power supply). The full set-up looks a little messy but once those video clips start rolling, who cares about a few little leads?

In terms of build quality the cartridge is adequately put together but I was disappointed with the splitter. The three output leads are soldered direct to the small circuit board inside the box and prevented from coming adrift only by plastic clips. The power/joystick lead had already come away from the board when the package was delivered, a fault that took me some time to track down.

Although Videomaster will work on a 1Mb machine, it can't be much fun – at the most you will be able to record and edit eleven frames of video, roughly half a second's worth at the standard 25 frame per second video speed! Even on a 4Mb machine, the default set-up is only 150 frames – just six seconds of full motion video – and it can only be increased at the expense of the sound buffer. In the same way, a hard disk is highly recommended as most video clips will take up between two and four megabytes of hard disk

Figure 1: A 160 by 100 pixel video frame doubled in size and saved as a TruePaint file.

EVERY PICTURE TELLS A STORY

So you'd like to know what Videomaster's screens look like? Here goes...

The main screen – the images are displayed in the video window and the sound track along the bottom.

There are plenty of options for grabbing single frames or stills though Auto works best if you happen to have the splitter.

You can even give your movies a choice of eight tints including sepia.

Frame by frame editing is a breeze – you can define and cut blocks, reverse them and even insert new frames such as those you've edited in an art package

*Figure 2:
A full colour 640 by 400 pixel still taken using the Colourmaster.*

space – more than you'll get on a floppy. The final requirement is a colour "broadcast" monitor and preferably an RGB-type such as Atari's SC1224 or a TV. *Videomaster* will work on a VGA monitor but there are problems. Firstly, true colour isn't available in high resolution (640 by 480 pixels) and secondly, most VGA monitors use a frequency of 60 Hz which can result in inconsistencies when replaying standard 25 frame per second videos and matching them up to audio samples.

SOFTWARE

The *Videomaster* software is the key that opens the door – it lets you view and digitise video sequences frame by frame as well as sound samples from the same or different sources. You can then replay the video frames at different speeds, reverse them and edit them in groups or a frame at a time.

Videomaster has a neat, intuitive interface with well marked push button controls. It runs in low resolution mode and features a rectangular window in the top left corner in which the current video signal is displayed and a longer window along the bottom for the sound sample waveform if present.

The window is 160 by 100 pixels in size and displays the current signal in 64 shades of grey. Video sequences can be recorded in this format and saved as video clips or video films, the difference being that video films include accompanying sound track and the clips don't. Even if there is no sound, recording a sequence as a film takes up more room on the hard disk as the disk file includes space for sound data.

Owing to hardware limitations, moving video can only be recorded in black and white and even then at a fairly low resolution. You can,

however, specify the frame rate, from the standard 25 frames a second down to two frames a second or even slower using the time lapse settings.

If you want to capture single frames, you have more flexibility in terms of resolution. You can save individual video frames in 320 by 200 pixel greyscale format (figure 1), which is simply a 160 by 100 pixel video frame doubled in size, or opt for one of two higher resolutions.

The precise resolution will depend on your monitor but with a standard Atari RGB monitor, for example, you can save at low resolution (320 by 200 pixels) or high resolution (640 by 400 pixels). What's more, you can choose either 64 greyscales as before or 32,768 colours.

The latter is achieved by pausing the video using its freeze frame or pause facility and then grabbing the still frame in three separate passes, one each for red, green and blue, and combining them together into a single image. As each pass has 64 levels of each colour, the final merged image has 64 by 64 by 64 levels or 32,768 different colours. Figure 2 shows a high resolution full colour still digitised using *Videomaster*.

If the greyscale moving images sound a little disappointing, they're not. At the normal resolution they are generally clear and smooth although straight line boundaries between one shade and another tend to become blocky, especially when the angle is

changing due to camera or subject movement. People and landscapes tend to record better than objects.

The public domain video player will play these recorded sequences at full screen size, sound and all, and while the blockiness or pixelation obviously increases, the picture quality is surprisingly good. Again the subject is important – a largely still scene such as a sweeping panorama will look blocky and a little unrealistic but an action sequence showing sport or a fast moving car, for example, will look better as the viewer isn't distracted by the blockiness. Other display formats are possible using the viewer, including four separate quarter screen views, diagonally split views and even picture in a picture!

Full resolution grabs are much better, especially those at higher resolution although there is some blurring and some edges can be a

little fuzzy and slightly discoloured. For example, at the boundary between two contrasting colours there can often be a rainbow effect rather than a smooth transition (figure 3). With some tidying up in an image processing package, full resolution digitised stills are an excellent alternative to those obtained using a colour scanner and while the quality isn't up to that produced by a flatbed scanner like the Epson GT6500, it is easily as good as that from most colour hand scanners.

If you're considering grabbing stills in monochrome, perhaps for DTP work, again the quality will surprise you. Most ST hand scanners dither the original image and then convert it to greyscales using software. This reduces the effective resolution and size dramatically and I'd venture to say that digitised stills are superior in quality to such artificial greyscales and dithered monochrome images.

Note that to take colour stills from a recorded video tape or a camera's playback facility you will need the electronic splitter but you can still take "live" colour stills from a video camera or camcorder using some coloured plastic filters supplied with the package. During the video digitising sequence you will have to place the appropriate filters over the lens by hand as each pass is taken – a somewhat fiddly business.

The ultimate quality of the stills will depend on just how good your hardware is. If you have a cheapish VCR it may not have a true freeze frame facility and the pause button will create streaks of noise across the

*Figure 3:
A close up of a digitised still showing the odd rainbow effect at colour boundaries.*

In the audio module you can record from microphone or player and cut and edit the samples.

Sequences can be set up to play any film or sample whenever a certain key is pressed.

Memory needs to be handled quite carefully.

If you don't buy this product, we'll send the team round!

screen. Obviously you won't be able to grab much from this type of device. Most of the stills you can see on these pages were taken with a high quality Sony camcorder which has a very clear freeze frame playback facility.

Images are saved on disk in *TruePaint*'s proprietary format, TPI, but as *TruePaint* is bundled with the package, you can easily convert them to TIFF format for inclusion in DTP documents. Other formats include Art Director, Prism Paint and even GEM IMG.

Documentation is good on the whole with a comprehensive 70 page manual for *Videomaster* and a smaller supplement for the *Colourmaster* splitter. Although the manuals contain everything you need to know to get up and running, there is little in the way of tutorial material to demonstrate the real power of the package.

VERDICT

Videomaster is an excellent product that turns multimedia on the Falcon into a reality. If you happen to have access to a video camera or camcorder, so much the better, but even if a video is your only source, there is a whole new world of video and image manipulation just waiting to be discovered...

✔ **Great colour stills with Colourmaster**
✔ **Good manuals**
✔ **Stylish interface**
✔ **Easy to use editing features**

PROS AND CONS

✘ **Mono-only video**
✘ **Memory hungry**
✘ **Moderate build quality**

CHANGES, CHANGES

The principle behind the *Videomaster* system is quite simple – you use the video sequencer features much as you would use a MIDI sequencer.

You can assign film or sound sequences to a particular key and then play them back for recording as one long sequence simply by pressing the right buttons. Each sequence can have a different speed, so you can use it to insert non-moving title or instruction screens (playing as slowly as one frame every nine seconds) in between action sequences.

Here we are preparing a sequence to use as a title screen for an existing home video.

The intention is to digitise small clips from the video and mix them together with title screens created in a paint package to create a single sequence lasting a minute or so.

This will then be played back onto a TV screen using the player program and simultaneously recorded onto the first part of the same home video tape.

Next time the video is played, there will be a customised introduction for you to enjoy!

STEP BY STEP

1 *The first step is to create some suitable 320 by 200 pixel screens with TruePaint.*

3 *... then choose a key to assign it to.*

2 *Load up Videomaster's sequencer module, choose "load a picture"...*

4 *Finally, point to the file itself using the program's custom file selector.*

5 *In this way, when all available clips and pictures have been assigned to a key, all that remains is to press the record button and play back each item in the exact order you want them. A film or clip will play through but you can set the length of time a picture displays itself simply by waiting for the required time before you press the next key. When that's done, the sequence is saved as a .VSQ file and can be played back at any time using the player program.*

"*Turns multimedia on the Falcon into a reality...*"

NAME: VIDEOMASTER FALCON
COMPANY: MICRODEAL
CONTACT: 0525 713671
PRICE: £99.95 (£139.95 WITH COLOURMASTER)
MIN MEMORY: 1MB (4MB RECOMMENDED)

EASE OF USE	✪✪✪✪✪
DOCUMENTATION	✪✪✪✪✪
EFFECTIVENESS	✪✪✪✪✪
VALUE FOR MONEY	✪✪✪✪✪

OVERALL **88**%

AMERICAN PIE

Jaguar fever hits New York…

The Jaguar made its debut in the States in late November. Atari spent around $3 million in their pre-Christmas advertising campaign in the New York and San Francisco test markets, which is where the Jaguar was originally planned to have been limited to prior to Christmas. However, many large retail chains started shipping Jaguars to their stores in other areas, which may have created a shortage of units where the ads were appearing and may also account for some retailers selling Jaguars for as much as $50 over the $250 suggested list price. Not to be left out of the Jaguar frenzy, authorized Atari Dealers started to receive their first shipments of Jaguars a few days before Christmas.

As of early January, the national roll out of the Jaguar is underway. In addition to the bundled *Cybermorph*, three other games are currently available: *Crescent Galaxy*, *Raiden* and *Dino Dudes*, with other releases expected over the coming months and the CD-ROM add-on in June. Jaguar accessories such as extra controllers and video cables have also started to appear. At the CES show in Las Vegas, over 15 new Jaguar titles have been announced. The success of the Jaguar during its initial launch has resulted in a roller coaster ride for Atari stock owners, with the price of Atari stock ranging from $5 to over $11 a share during the past few months. The Jaguar's main pre-Christmas competition in the 32/64 bit game console market, the 3DO, had disappointing sales from many reports, most likely due to its $700 price tag.

One problem that Atari and other video game makers are facing here in the U.S. is the pressure from the government to reduce video game violence. While none of the Jaguar titles released so far would be considered excessively violent, Sega has announced it will pull one of its CD games, *Night Trap*, and will later release a less violent version.

On the Lynx front, new ads are appearing alongside those for the Jaguar and Atari has announced a new promotion where anyone buying a Lynx before the Super Bowl can get a free Lynx *NFL Football* Game Cartridge.

Not all of the news here is Jaguar or Lynx related. Walnut Creek, a large CD-ROM producer, has just released the Gemini Atari CD-ROM which contains over 600 megabytes of shareware and public domain files. The files on the CD are in both a BBS ready archived format and unarchived ready to be run.

Popular titles here in North America include Gribnif's *Geneva* and *STalker 3*, Atari's *Speedo GDOS* and *AtariWorks*, Codehead's *Warp 9* with the Extendo-Save modular screen saver, It's all Relative's *Photo Show*, Oregon Research's *Diamond Edge*, SoftLogik's *Pagestream* and DMC's *Calamus SL*. Also popular is Bitstream's WordPerfect 6.0 Font Pack, a collection of 50 Speedo fonts for users of the MS-DOS version of WordPerfect 6.0, which work just as perfectly for users of *SpeedoGDOS*. Eagerly expected for first quarter release is Gribnif's *NeoDesk 4* replacement desktop which will fully integrate with their *Geneva* multi-tasking environment.

Until next month…

> Charles Smeton has been an ST owner since 1985 and a long time Atari owner since the 8-bit days of the early 80's. He is also a past president of the Washington Area Atari Computer Enthusiasts (W.A.A.C.E.) and the owner of NewSTar Technology Management, which develops the *STraight FAX!* software for Atari computers.

All the latest news from Germany…

TOP MARK

A Swiss group of engineers under Fredi Aschwanden have finished the development of a computer called Medusa, as mentioned in *ST Review*'s news last month. The last missing link of the SCSI board has just been released, prototypes have been shipped and production is starting. This remarkable machine has a 68040 running at a 64MHz clock rate and uses a PC graphics card.

The speed is remarkably fast; first tests show Medusa to be at least two to three times faster than a normal TT and developers are currently testing their software and tools. The price will be around £3,100 for a machine with 8Mb RAM, a 320Mb hard disk, graphics card and tower case. Most of the professional users in DTP, CAD, research or business, of which a lot still exist here in Germany, are waiting for this machine. Perhaps they could make a film about it: *TT – The Next Generation*! (*groan… Ed*)

Rumours that Atari will not be exhibiting at this year's CeBit Show are going around. Atari Germany's "official" statement is "not yet decided", but looking behind the scenes it makes more sense to get the Jaguar going – and CeBit is not the show for a games machine. What else could they show? The Falcon from two years ago? No. Better that Atari think about some sort of Falcon with Jaguar technology and a fast 68030 heart at an affordable price…

Bad news: SHIFT went out of business – not bankrupt, but simply not making enough money in Germany and through European distributors. The famous software company was well known for *Arabesque Pro*, *Convector 2*, *Interface* (which nearly every German developer uses to create resource files) and *Zoom!*, the icon editor that also converts Windows icons.

Now the good news: noI Software, a brand new company, is now supporting the former SHIFT products and intends to release more. noI is also working for other companies; they are doing the new *Screen-Eye* software for MATRIX's Falcon real-time video digitiser and the software for COMPO's T'Phone, the connection box between the Falcon and a telephone line for use as a telephone, answering machine or voice-mail system. Rumour has it that they are also working on a high-power, low-cost spreadsheet that will work together with other applications as an integrated package. Release date? Before the summer.

Gemini, the shareware replacement desktop, is now up to version 1.99. Many users have been waiting for this since it partially supports *MultiTOS* and allows for long file names (32 characters instead of the usual 11).

Finally Theresa Orlowski, Germany's hard core porn queen who has her own satellite sex channel (VTO), uses Atari computers in her office. Now didn't you just want to know that…

Best regards!

> Manfred Bäcker is 26 years old and works in a computer shop in Cologne. He's been programming Atari computers since 1985 for his private needs and is active on the various bulletin boards in Germany.

TECH TALK

Come in Atari wherever you are...

The latest batch of rumours on the networks is that Atari have either stopped software and TOS/*MultiTOS* development or have halted manufacture of computers altogether. Atari remain rather quiet in their response; their only comment was to deny it.

So what is the truth of the matter? Are Atari about to neglect many thousands of users in favour of game consoles? This is entirely possible but seems unlikely. Regretfully, Atari do not seem to be concerned with these rumours, which are damaging to say the least. They could easily counter these by saying that new beta versions of *MiNT*, *MultiTOS*, CD-ROM drivers, *AtariWorks* and others have been distributed among developers. In fact, the latest batch arrived only days before writing this column.

It is true that all the developers at Atari are busy with the Jaguar. Atari is a small company and instead of hiring more programmers, they decided to use the available team. This has caused unfortunate delays with *MultiTOS* and TOS 5 which are virtually ready for public release and offer many benefits to existing users – so much so that TOS 5 features are already public knowledge via the *Atari Compendium*, a programming reference book that is available to all.

The Falcon has been a commercial failure in the opinion of most users. I have to agree, but it is a real shame. Every Falcon owner I speak to is extremely happy with his investment, me included. In contrast, we now have four multi-tasking systems to choose from – not even the PC can beat this! New programs are still appearing and most are compatible with the older ST and TT, but some are Falcon specific. On the word processing front, *That's Write 3* and *Papyrus* are in the pipeline along with *Chagall* and *DA's Picture* for image manipulation as you probably know from reading this magazine. With the forthcoming release of Voice Mail systems and the availability of programs like *STraight FAX*, which can now run as a desk accessory, the Falcon should be an ideal tool for the small office.

I am committed to the Falcon and will continue developing software for the TOS range as will many others. I would like to see Atari take a few days off from the Jaguar and release all the products that are just sitting there ready for the general public. This will boost everyone's confidence, increase Falcon numbers and help sales of other products, which in turn will cause developers to produce more programs. I just hope that someone at Atari Corporation is reading this...

Apart from being a technical writer for *ST Review*, Ofir Gal is also a registered Atari developer and Falcon owner. He gets a gold star for his programming of HiSoft *BASIC*'s GEM toolbox but a definite black mark for the time-keeping of his writing...

Andrew Wright looks into the future of computer animation with a preview of DA's Vector Pro.

Without a doubt, *DA's Vector* can realistically lay claim to being one of the most innovative graphics packages ever to hit Atari screens. The news that Digital Arts have come up with *DA's Vector Pro*, an enhanced version with scores of basic improvements and some radically new ideas, will make a lot of mouths water.

In fact, claim Digital Arts, the new version is the core element in the first fully digital video production system for the Atari. *DA's Vector Pro* will be the main tool for adding computer generated graphics and titling to digitised video sequences (including digitised sound) and then exporting them at professional resolutions back to high quality video tape. This is pretty adventurous stuff – one second of real video takes up some-

DA's Vector Pro now boasts multi-copy options.

PRO VECTOR

A REVOLUTION IN ATARI GRAPHICS

INSIDE INFO

DA's Vector is a vector graphics package that offers far more than just drawing. It can create complex animations using keyframe techniques, automatically generate a number of different charts and graphs and create true colour output using an internal 24-bit palette. With PostScript and Calamus font support, a 3D extrusion function and the multiple layering facilities demanded by professional designers, it's not hard to see why it has been so successful.

Better still, DA's Vector will also run on any Atari although 2Mb of memory, a hard drive and a high resolution screen mode are required. For ST/STE owners this means either a monochrome monitor or a colour graphics card.

DA's Vector Pro will have much the same requirements and share the same 80 page ringbound A5 manual with a new section outlining the changes and an updated on-line help facility. The price has yet to be fixed but UK distribution will be through London-based CGS.

Colour gradients can be displayed in a number of steps to speed up the display.

thing like 30Mb of space on a hard drive – but having seen a beta of the Pro version, we're halfway there already.

Monochrome images can now be imported in TIM format (a variation on TIFF) either for vectorising or for use as object fills. Linear and radial colour gradients can now be used to fill vector shapes, and bitmap images used as fills now rotate with the objects.

To speed up the display, which can be very slow indeed when colour gradients are being drawn, there is now an option to specify the number of colour steps on the screen.

Another new feature is the Blend tool. Blending turns one shape into another but leaves all the between stages on the screen to create a completely different object. Vector objects can be created with one or two sub-paths and the three separate objects can then be blended together with various colour gradients. The range of possibilities this opens up for creative design is enormous.

However, it is the animation editor that has gained the most, especially

in terms of new camera and filter functions. There is a separate camera for each layer of the animation, so sequences can be built up comprising several different objects moving in different directions and at different speeds. With the camera able to be directed to a specific track and even zoomed in and out to suit, extremely complex animations are possible.

The camera and its track are just like ordinary vector objects and both can be edited in the same way. The camera track consists of four Bezier curves and these can be adjusted, as

with Bezier curves in the vector graphic part of the program, by moving the tangent points. An automatic "smooth curve" option is also provided. The camera itself can be resized proportionally (equivalent to changing the magnification) or disproportionately thus producing distortion.

Just as a filter can be placed over the lens of a real camera, *DA's Vector Pro* allows various filters to be inserted between the camera and the animated object. The filters include saturation and luminance filters, to alter the colour of the animation, and a threshold filter to create pixel-based fade ins and outs.

A fourth filter allows various tracks to be superimposed on others and all four can be combined to create an almost infinite number of special effects. It is even possible to use imported bitmap images, vector colour gradients and pure colour as filters.

With forthcoming modules for handling sound in AVR format and the promise of some exciting hardware, it looks as though real multimedia is about to arrive.
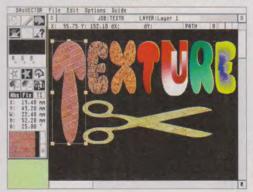
Image files used as fills can now be rotated and there are far more gradient options.

WRIGHT ISSUES

In flight with Top Gun...

I read Ofir Gal's comments on speed (Tech Talk, Xmas issue) with a great deal of interest. He and I are more or less at opposite ends of the Atari universe as far as our systems are concerned, but we do share some things in common. It would appear that a healthy respect for *NVDI* and what it can do is certainly one of them.

The last thing I want to do is get involved in a month by month battle of wits with a fellow columnist largely because he knows more about the inside of the ST than I ever will. But I would like to answer the same question he posed, but in slightly a different way.

Why are we so obsessed with speed? There's much more to it than the mine's-faster-than-yours syndrome. Consider the professional user who needs to convert a dozen or more files from one format to another, apply some special operation to them and then zip them up ready for transmission by modem to some far off destination. They could as easily be text files as full colour images and the destination could be a magazine or a DTP bureau.

If it takes fifteen minutes on a standard ST, it would take only five minutes on a 25 or 36 MHz machine. If that ten minutes can be saved on similar operations several times a day, it's not hard to see that an accelerated machine can save the user something like an hour a day. Fit an extra hour's work in and it won't be long before you start recovering the cost of that accelerator.

Now the counter argument goes something like this. With a multi-tasking system you can do all this in the background and then get on with something else, such as writing a letter. Can you? I certainly can't! Multi-tasking is a complete waste of time unless you have the kind of mind that can cope with it.

In common with many other humans, I like to finish one job and then start another. I've got a logical ordered mind and that's the only way I can work. I can't concentrate on a letter when I'm subconsciously waiting for some other background process to finish. I need to know it's working and I need to know it's doing what I told it to do.

Consequently I spend a lot of time gazing blankly at the screen. That's why, in the words of *Maverick* and *Goose*, I feel the need for speed. I know I can justify it to my bank manager.

Andrew Wright is a freelance writer for various magazines and has been with ST Review since its inception. When not watching Top Gun, he can usually be found staring blankly at another, more familiar screen...

Creating fancy headlines in a word processor can be a real headache. Steve Pedler finds a program that eases the pain…

IN STYLE

To make your documents or business stationery stand out, what you need is an eye-catching headline or logo. Not all DTP programs are well suited to this – the range of text sizes and effects is often limited, and the results don't reach out and grab the reader's attention as they should… until now, that is, with the release of *Textstyle*, which is designed to produce text that does exactly that.

GOOD PEDIGREE

Textstyle is written by Jeremy Hughes, the author of superb programs such as *Fontkit Plus* and *Imagecopy*. In brief, the program takes a small amount of text (up to 200 characters, which is ample for any headline or logo you might want to produce) and displays it in the chosen font and size. You can also apply a wide range of different effects to the text to make it stand out.

The program is installed by copying it and associated files onto your working disk. It does not require

Figure 1 – the new ST Review logo!

GDOS to be present. Using *Textstyle* is very simple. Firstly, you enter the text to be styled. This can be directly via the keyboard or loaded as an ASCII file from disk. As an example of the results that can be achieved with *Textstyle*, let's design a new logo for this magazine.

The words *ST Review* can easily be typed in using the "Text" entry from the Edit menu. Then choose a font in which the logo will appear; *Textstyle* can use either GEM bitmapped fonts or Calamus vector fonts. The latter

Figure 2 – several adjustable text styles are available.

are much preferred as the text can be scaled whereas GEM bitmap fonts cannot (see box). There are many Calamus fonts available from PD libraries, but we'll use the Clarendon Italic Light font supplied with *Textstyle*. Unfortunately, Speedo font support is not yet at hand, although the manual mentions that this may be available in future versions.

For the *ST Review* logo we'll choose a 30-point font (font size can be specified up to 999.9 points which is over a foot tall!). It's a lot of fun to experiment with the various effects, but for *ST Review* we want a restrained but eye-catching logo. The text needs to be a little thicker (and the degree of thickening is adjustable), and then 3D shadowing can be added; the end result is in figure 1. Figure 2 shows the text style dialogue box, with the various options that were set to produce this logo.

OPTIONS

There are many other options. For example, the font tracking can be altered which changes the gap between the letters. If *Textstyle* is used to style a whole paragraph rather than a word or two, then leading (the space between the lines

Figure 3 – font size and spacing are adjustable.

of text) and text justification can both be set as in figure 3.

The current version of *Textstyle* only allows text to be displayed in straight lines. It would be even better if text could be made to flow around circles or be rotated to any angle. Perhaps in a future version?

Once the text has been processed, the result can be saved as an .IMG or TIFF file, ready to be imported into a graphics or DTP package. If a straightforward printout is required, *Imagecopy* (by the same author and also available from the ST Club) can be used.

VERDICT

Textstyle is an excellent program. It is of use to anyone who wants to produce logos or headlines in large text sizes and with different effects – even banners with huge text sizes, such as a single letter occupying a whole sheet of A4 paper. Highly recommended.

ATARI ST REVIEW ESSENTIAL BUY

✔ Easy to use
✔ Generates superb logos and headlines
✔ Vast range of PD fonts

PROS AND CONS

✗ Only basic effects
✗ No Speedo support

"Perfect for anyone who needs to produce large logos or headlines."

NAME: TEXTSTYLE
COMPANY: THE ST CLUB
CONTACT: 0602 455250
PRICE: £14.95
MIN MEMORY: 0.5MB

EASE OF USE ✪✪✪✪✪
DOCUMENTATION ✪✪✪✪✪
EFFECTIVENESS ✪✪✪✪✪
VALUE FOR MONEY ✪✪✪✪✪

OVERALL **91%**

BITMAP AND VECTOR FONTS

The original fonts supplied with Atari GDOS were bitmap ones, in which each character is essentially a picture made up of tiny dots. These have the disadvantages that a separate font file is required for each point size and that scaling them invariably produces unacceptably low quality, although the fonts are of high quality at their intended size.

Vector fonts, on the other hand, contain a description of each character, independent of size, allowing one font file to generate almost any point size. Atari were very slow to introduce such fonts and at least three different types of vector font are now in use. Atari have finally produced their own vector fonts (Speedo fonts from Bitstream) and it seems likely that these and Calamus fonts will become the *de facto* standards on the ST.

Yet another multi-tasking system hits the ST. Ofir Gal has a brief look...

MAG!X SPELL

A few months ago, you could have looked at PC Windows users with envy; now, we have four multi-tasking operating systems to choose from! The latest addition is *Mag!X 2* which completely replaces TOS, unlike *MultiTOS* or *Geneva*. Written by the programmers who gave us *EOS* (also known as *KAOS*) and *NVDI*, it looks very promising and already has a wide user base in Germany.

WHAT IS MAG!X?

Mag!X replaces TOS with a faster operating system which also supports pre-emptive multi-tasking. This means that several programs can be run simultaneously while performing a background task like printing.

Mag!X allows you to define the priority of each program and
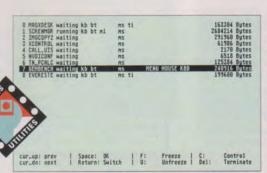

The Mag!X menu lets you switch between programs and also displays the amount of available RAM.

automatically gives the foreground application a higher priority. The priority ratio between foreground and background applications can also be determined via two simple CPX modules. Unlike *MultiTOS* and *Geneva*, *Mag!X* does not slow the system down – it actually speeds it up!
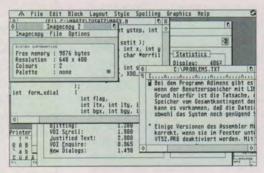
FEATURES

As a complete operating system, it is installed in the Auto folder and behaves a bit like a reset-proof RAMdisk. When the system boots up, *Mag!X* is loaded into RAM and causes a warm boot. From this point it stays in RAM even after a reset, so there's no need to load it again in case of a minor crash.

In terms of features, *Mag!X* has no fancy buttons or special effects. Each

The Task Manager can be accessed by pressing <Alternate> +<Control>+<Esc>. The display is a little technical but shows how much memory each program and accessory is using.

Mag!X can handle multiple programs with ease, although the standard ST resolution is not ideal for a multi-program environment.

Mag!X Desk is included in the package. While not as powerful as Gemini or NeoDesk, it is still a big improvement on the Atari version...

Several options can be handled from this Control Panel module. If you prefer Mac-style pull-down menus, for example, just click on the appropriate button!

window has an additional gadget which can be used to send it to the bottom of the window pile. The file selector is slightly improved as are dialogue boxes but that's about it. Instead, *Mag!X* is compatible with *Let 'em Fly* (given away on last issue's cover disk) which provides the additional keyboard shortcuts in dialogue boxes and extended editing.

There is a current limitation of six desk accessories just like TOS – and unlike both *Geneva* and *MultiTOS* which can load as many as you wish and at any time. A useful feature is the ability to hide applications, effectively removing them from the screen; unhiding a program returns it to the state it was in before it was hidden, similar to the Sleep feature found in *Geneva*. As with the competing systems, TOS and TTP programs can be run inside a window, courtesy of a program called *VT52*. *Mag!X* can use GDOS fonts and also supports the GEM clipboard.

Selection is by a simple click on a program's window or by using the *Mag!X* menu which is available from the top corners of the screen. Here you can also hide and unhide applications and desk accessories.

Mag!X currently works on all models and TOS versions except for the Falcon; a Falcon version is expected to be ready in April 1994

PERFORMANCE

The most surprising aspect is the speed. It is perfectly usable on a standard ST – in fact your ST is faster with *Mag!X* installed than without it! On average, *Mag!X* is twice as fast as TOS at graphics and text display, and installing *NVDI* takes screen redraws into turbo mode! Disk access is also noticeably faster with *Mag!X* and the system really flies, even if several programs are running.

Mag!X looks very promising indeed and if the Falcon version works as well, I know which multi-tasking system I will be using...

IN PUBLIC

Forgive me father for I have sinned...

No matter how squeaky clean your disk collection, I'll wager that there are a few dodgy packages lurking in there somewhere – yes I'm talking about unregistered shareware. I guess we all bend the rules a little bit when it comes to using freely distributable software and sad to say I've been one of the very worst offenders in the past. However last month I had a change of heart; let me explain...

It all started with a determined campaign to rid my hard disk of unregistered software, but the thought of living without packages like *GEMView* and *Superboot* proved too much to bear and before I knew it I found myself standing before the currency exchange counter in Barclays, seven crisp ten pound notes grasped firmly in my sweaty palms. Gingerly they were handed across to the cashier and in return I received $100 cash, which was duly split up and despatched to half a dozen destinations around the world.

What led to this transformation? Well, when I considered what the shareware market has given me over the years I could hardly stop myself from ramming the cash in the envelopes. The very first program to take advantage of my shiny new Falcon was shareware and so were at least five gorgeous titles that followed it. Added to which, every program I registered was exactly what I wanted – after all I'd been trying them out for goodness knows how long without even putting my hand in my pocket.

There's also the value for money stakes to consider. For my £70 I got a fully-featured graphics conversion package, a powerful archiver, a boot-up manager plus a small bucketful of utilities. How many commercial titles could I have scraped together for that much? And bear in mind that the money covered not only the software I use on the ST, but also on the other machines I find myself forced to use.

It can't have escaped your notice that some software publishers are beginning to lose grip on the ST. The shareware market shows no sign of that trend but unless it's supported *it too will start to die*. There will be no more *Selectric, Kandinsky, GEMView, Superboot, WinRec, Backward II, Grandad* – the list goes on and on and on.

Don't get me wrong – I'm in no position to preach to anyone when it comes to shareware, but I surprised even myself with just how easy and economical it was to pay my debt to software society. I can now use the programs I find so essential without feeling the prod of my conscience and for that alone, the £70 was well spent.

Until next time – stay lucky...

Nial Grimes is an international jetsetter, fashion guru and general all-round good guy. The quality of his work is matched only by his talent for sneaking fictitious author notes in under the editor's nose...

NEXT MONTH

... on the ST Review cover disk!

CALLIGRAPHER PROFESSIONAL

We're giving away this superb document processor – just look at these features:

- Extensive graphics and text import/export facilities.
- Vector fonts – print any size between 6 and 128 points.
- Full WYSIWYG display.
- On-line "Help" system.
- Built-in vector drawing tools.
- Output to the majority of printers.

And, as usual, this will come with one of our excellent, three page tutorials...

Super giveaway – Calligrapher Professional on cover disk...

REVIEWS, REVIEWS...

Next month, *ST Review* will have plenty of product reviews including:

- **PixArt** – Omikron's brand new paint package. Well worth working with or just run of the mill? We'll provide the answer.
- **Thought!** – Titan Design's "idea processor". Usable or just an interesting idea? Read our review to find out.

We'll also have previews of *Papyrus* and *That's Write 3...*

ON SALE FEBRUARY 24 – PLACE YOUR ORDER NOW!

With the second photograph, the sticky tape has caused serious damage to the print. One finger is missing from the mother's hand and the baby's head is incomplete.

Can a computer like the Falcon replace the specialist talents of a photographic artist? Ofir and Hannah Gal put this to the test.

PHOTOGRAPHIC FANTASY

W ith applications like *Studio Photo* and the forthcoming *TrueImage* and *DA's Picture*, the idea of image manipulation in true colour on a Falcon is very attractive, especially with a CD-ROM drive making access to PhotoCDs possible.

How does working with the Falcon compare with the traditional, manual method of retouching photographs? With a professional photographer and copies of *Studio Photo* and the unfinished *DA's Picture*, we decided to find out...

OLD FASHIONED RETOUCHING

Hannah, the photographer, uses traditional retouching techniques to improve and correct her own work, or when restoring old photographs.
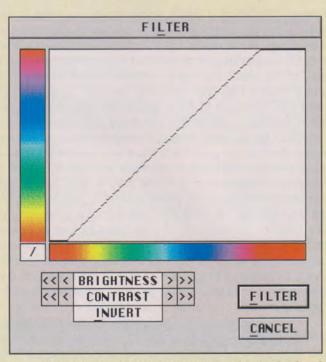
KODAK PHOTOCD

The simplest, and cheapest, way of getting a photograph onto the computer screen is to scan it using Kodak's PhotoCD service. The charge for this varies greatly – anything from 50p to £25 per image depending on speed of return. The 24-bit true colour scan produces four separate files ranging between a preview size image to a file with a resolution exceeding 3000 by 2000 pixels. The size of each PhotoCD image is about 4.5Mb, but the uncompressed data for the four images totals around 20Mb! The compression scheme used by Kodak is impressive to say the least, and there is no loss of quality.

The original plan was to work on the file that is designed for TV viewing, with a resolution of 768 by

The colour content of an image can be manipulated by using this graph in Studio Photo. While this offers great flexibility, it is not as intuitive as the separate brightness and contrast filters.

The process varies, depending on the project, but is lengthy – a day per image is not untypical. Restoration may involve too much effort to be viable.

For an old black and white photograph, she first takes a photograph of the original and then produces several prints ranging in contrast and brightness, all of which can be controlled in the darkroom.

The next stage is the process of removing black stains with the aid of a mild bleaching agent. This is normally carried out with a very fine brush – there is no room for error. Any white areas, such as scratches, then have to be coloured. Some photographs are so badly damaged that parts have to be carefully painted in to match the adjacent areas. Blurred and faded lines are enhanced by painting over them with a darker colour.

Finally the print is photographed and the negative used to produce the restored image. Fine contrast and brightness adjustments can also be made at this stage as well as sepia or brown toning to give it back its old appearance.

512 pixels and is approximately 1.2Mb in size when uncompressed. After viewing the various files it became evident that the bigger file was more suitable. This file is, according to Kodak, designed for up to A4 reproductions and boasts a resolution of 1536 by 1024 pixels – 4.7Mb worth!

SETTING UP

Since the whole file must be in memory for viewing and editing, a 14Mb memory expansion for the Falcon was essential. A virtual memory program like *Outside* helps, but proved too slow when running in true colour mode.

A CD-ROM drive read the PhotoCD and the files were then copied onto a standard hard drive. We used *Studio Photo* to load the files and converted them to standard non-compressed TIFFs, the three images requiring 14Mb of disk space.

Screen resolution was another problem. The Falcon can display a 768 by 512 pixel screen in true colour on an RGB monitor using

Most image manipulation programs offer a toolbox like this for quick access to the various tools.

Studio Photo can load all PhotoCD resolutions. The largest file cannot be edited on a Falcon without virtual RAM since it requires 18Mb!

interlace. With ScreenBlaster, this can be pushed a little further, but the interlaced display is simply not suitable for this sort of work due to the flicker. We had to go back to an SVGA monitor, where true colour mode defaults to a ludicrous 320 by 240 pixels!

This can be pushed to 512 by 384 pixels using ScreenBlaster and we ended up with a virtual screen of 1024 by 1408 pixels where only about a third was visible at any time. Although some programs have compatibility problems with *NVDI* in true colour, both *Studio Photo* and *DA's Picture* worked fine.

Outside was also included in the Auto folder, set to give an extra 32Mb of RAM, so that more than one or two images could be viewed and edited at the same time. While *DA's Picture* provides its own virtual memory system, it is slower than *Outside*.

THE PHOTOGRAPHS

Of the three chosen photographs, two only needed minor work. The third was eighty years old and had been folded in half at one time and then taped across the resulting crease. When the tape was removed, part of the emulsion went with it leaving a brown patch where the baby's face used to be. In addition, the photograph had its fair share of scratches and stains.

The colour photograph was originally a 35mm slide taken a few months earlier; cat scratches to the model's face occurred the day before the shoot. Retouching 35mm slides is virtually impossible – you either have to copy the slide to a larger format or print the slide and then retouch the print. Even then, colour retouching takes far longer than black and white and it's very difficult to match the colours perfectly.

MAJOR RECONSTRUCTION

STEP BY STEP

Working manually on the second photograph required some very specialised techniques – and almost four days' work.

The fold and stains left from the sticky tape are clear to see on the original print.

After cropping the photograph, the scratch on the forehead and the stain were removed using a bleaching chemical.

The last stage before copying. All scratches are gone and the background is smoother. The baby's face has been worked on as has the missing finger.

The final image was photographed, printed, sepia toned and the contrast adjusted again.

The original image was cropped, contrast and brightness increased and a Sharpen filter applied to the whole image.

Most of the scratches and stains have been removed using the cloning tool. Even the stain across the image is easing away.
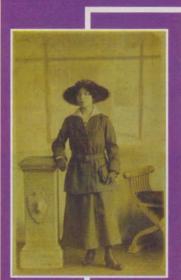

Finally, contrast and brightness are increased to bring the dull image back to life. And all in six hours' work...

STEP BY STEP

REMOVING SCRATCHES

The first photograph had various surface scratches...

The original image with visible scratches everywhere.

Eleven hours later, this is the result of the manual process.

With some of the scratches removed, and by using DA's Picture's Sharpen filter, the image is much improved.

The final image with all scratches removed and a smoother background. Even the scars on the neck have been "cloned" away – just a couple of hours' work in all.

MANUAL RESTORATION

The picture of the standing lady only suffered from the usual scratches and a tint from age. Contrast was increased when printing the first copy, followed by retouching. The whole process including copying, film processing and printing took about 10 hours; the final copy was brown toned, so adding another hour to the process.
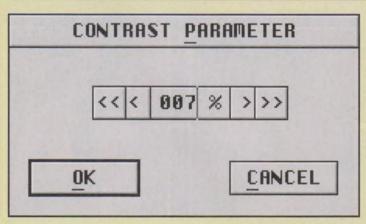
The second picture proved to be a difficult task but luckily the client was only interested in part of the photograph, so the work was confined to a third of the image. Even so, there was a lack of detail where the sticky tape had damaged the image, and Hannah had to re-invent the baby's face and give his mother her missing finger. She also coloured the background to make it look smoother, increased the overall contrast and sepia toned the final print. This took four working days.
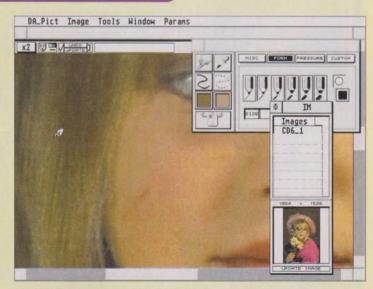
ENTER THE FALCON

The colour slide of the girl was worked on first. The image was a little dark so we brightened it by a few percent using *Studio Photo's* excellent effects. Removing the scratch was very easy using the cloning tool in *DA's Picture* which lets you copy user-selectable sections to new positions. The opacity of the tool can also be set along with various other parameters.

The scratches were successfully removed by cloning suitable areas of the girl's face in less than 30 minutes. Hannah decided to get creative at this point to see if she could actually improve the photograph rather than just correcting it. You can judge the results for yourself.
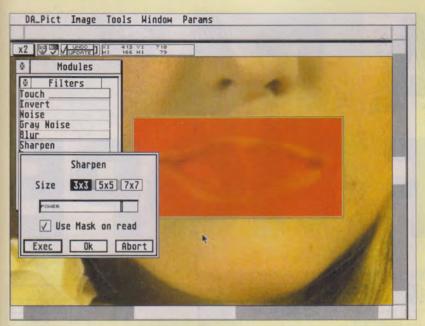
The second image of the standing woman was cropped, the contrast and brightness increased in *Studio Photo* and then saved as a TIFF for importing into *DA's Picture*. The image was a little blurred but the

CONTRAST PARAMETER

```
<< | < | 007 | % | > | >>
```

OK   CANCEL

Adjusting contrast in Studio Photo is simple, fast and accurate. Careful adjustment can bring the dullest picture to life.

DA_Pict Image Tools Window Parans

x2

MISC | FORM | PRESSURE | CUSTOM

IM

Images
CD6_1

1024 x 1536

UPDATE IMAGE

The Image Manager in DA's Picture is useful for getting a quick overall view of the image.

```
DA_Pict  Image  Tools  Window  Params
x2  [icons] UNDO   K: 413 V: 710
              UPDATE H: 166 H: 79
  Modules
  Filters
Touch
Invert
Noise
Gray Noise
Blur
Sharpen
         Sharpen
  Size   3x3  5x5  7x7
  POWER
  ☑ Use Mask on read
  Exec    Ok    Abort
```

The mask feature works by preventing areas of the image from being affected by the filters and effects. In this example, the Sharpen filter only affects the lips.

impossible to tell the difference and the computer is much easier to use. When it comes to reconstructing badly damaged images, however, the traditional method still has an advantage if quality is important. While it may not be visible from the pages of this magazine, when viewed at a large size the hand-painted print looks better.

It seems that there is no clear winner. As expected, the computer has a place in the photographic process, a place that is now acknowledged by the photographic industry as a whole, but it does not fully replace the old-fashioned techniques. As for Hannah, she's saving up for a CD-ROM drive and memory upgrade...

Sharpen filter was used quite successfully to bring out the edges and outlines, and the Crayon tool to emphasise some details. Using the eye dropper, the required colour was obtained from the image and the crayon used to paint details using that colour. *DA's Picture* lets you define two separate tools for the left and right mouse buttons; a typical setup throughout the project was to have the eye-dropper on the right button, and the pen or crayon on

the left. Finally, all scratches were removed using the cloning tool.

The last image of the mother and baby was by far the hardest to manipulate. As with the other images, *Studio Photo* was useful for adjusting contrast and brightness as well as cropping the required part of the image. Background smoothing was achieved by using a combination of cloning and a thick crayon. Adding details proved more difficult but became easier with practice – as in

the manual restoration, a finger had to be drawn and details added to the baby's face and blanket. Finally, we imported the image back into *Studio Photo* for fine adjustment of colour balance and contrast.

CONCLUSION

Compared with a manual approach, retouching on the Falcon takes a fraction of the time. In many cases, such as the removal of a tiny scratch, it's

Effects	Windows
Mosaic	⌘M
Invert	⌘I
Convert	⌘G
Lighten	⌘L
Darken	⌘D
Contrast	⌘C
Lessen	⌘E
Blur	⌘S
Filter	⌘F
Convolution	⌘O
Histogram	⌘H
Mirror	⌘R
Spherize	⌘J
Rotation	⌘U
Resize	⌘T

Like DA's Picture, Studio Photo has a wide range of fully-adjustable visual effects.

STEP BY STEP

WORKING IN COLOUR

Retouching in colour is very difficult to achieve manually. But it's quite a different story with a computer...

The original slide. The red scratch marks on the girl's cheeks spoil an important photo shoot.

After brightening the image a little, a variety of tools and the Mask facility in conjunction with the Blur filter were used to give the hat, flowers and hair a soft focus-like effect.

After removing the scratches, Hannah used the mask again to sharpen the lips and eyes. She also used the cloning tool to remove the coloured patch from the jumper.

Hannah Gal is a photographer of some note, having worked for Amnesty, the Liberal Democrats and the NSPCC. Her work is regularly featured in various photographic magazines and she was the subject of a recent profile in *Professional Photographer*.

David Nilson digs out his cyberpunk shades and sheds a little light on the colourful world of raytracing..

A RAY OF HOPE

It only takes one look at films like *The Lawnmower Man* or *Wild Palms* to see the direction in which computer animation is heading – realism! No matter how surreal the setting, the viewing public want to be able to feel that they are really there; to be able to reach out with their minds and become a part of the images shown on screen.

Raytracing can supply that illusion. By simulating real substances in three dimensional space it's possible to create vast virtual worlds within your machine; office blocks can be viewed months before they are even built and there are no inconvenient restrictions on cost, size or physical laws. If you want to design a flying car formed from solid gold with platinum number-plates and diamond studded wheel-trims, you can! In the world of raytracing, your imagination is the only limitation...

LISTEN SPHERE

Raytracing is often used as a blanket term to cover three-dimensional designs from start to finish, but in
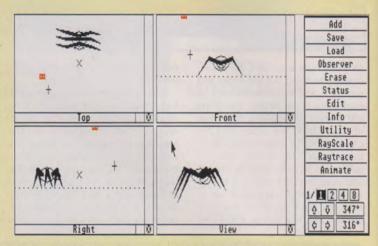
Light, reflections and shadows are what raytracing is all about. This superb public domain POV image illustrates the point nicely.

fact it can be broken down into three distinct processes – modelling, rendering and raytracing. In simple terms, a modeller allows you to design shapes, rendering transforms them into solid objects and raytracing provides a final touch of realism though the addition of shadows, reflections and shading. The modeller

can be viewed as an art package, although one that affords the flexibility of working in three dimensions as opposed to the usual two. Objects can be viewed from any angle, brought to the foreground, pushed into the distance or combined to form a totally new structure. By using these simple primitives and adding a few shapes of your own it's possible to construct any "real-world" object, from a simple lampshade to an intricate porcelain figurine.

From within the modeller all of these shapes are viewed as "wire-frame" objects and the rendering process then takes over to turn them into a convincing imitation of solidity. But hang on, aren't we forgetting something? When it comes to the real world, we recognise substances by much more than simple shape; there's colour, transparency, reflection and even texture to consider. These too are replicated by the raytracing process and any logos too tricky to design

can be projected into the scene as a two-dimensional drawing.

As simple as the process is to describe and imagine, any raytraced scene takes many hours to produce on a computer – after all, the
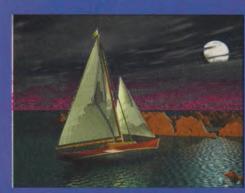
machine has to decide how light affects every pixel in the scene, influenced by potentially hundreds of objects. However most people are willing to concede that the results are worth the finger-tapping wait...

GFA Raytrace is quite antiquated by today's standards, but remains the best choice for beginners thanks to its uncomplicated interface.

BE PERSISTENT

The *Persistence Of Vision* raytracer is different from most other packages in that it has no interface. Instead, all objects in a scene are entered through a text script, which is "parsed" by the tracer itself. Don't be fooled into thinking that this limits the quality of the results though – POV is one of the most competent raytracers on the market as this wonderful yacht scene shows.

The good news is that there are several ways to make POV easier to confront. Your first purchase should be a shell program, which removes the need to deal with a command line altogether, and a good programmer's text editor will come in handy too. Completely graphical shells for POV are beginning to appear on the PC and who knows – before long ST and Falcon owners may be afforded the same luxury...

Reality is easy to represent with a raytracer, but imposes no strict limitations on your scenes – and you thought spiders in the bath were a bad thing, huh?

Outdoor scenes are simplicity itself with InShape – it will simulate a subtly graduated sky complete with clouds and a realistic ground surface.

THE COLOUR OF MONEY

The traditional view of raytracing is of a screen full of tastefully shaded spheres laid carefully over a chequered floor. Quite frankly, comparing those products of yesteryear with results from today's software is like judging the performance of a Ferrari with a test drive in Stephenson's Rocket!

The nice thing about raytracing these days, is that it needn't cost a fortune. OK, running *InShape* on a 14Mb Falcon with wastelands of hard disk space is going to cost a few pennies, but plenty of packages can provide the basics on the tightest of budgets.

Good old *GFA Raytrace* is still available at a very attractive price and can produce some very tasty results in 512 colours on a standard machine.
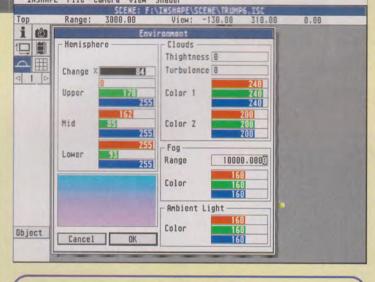
If you want to experience real power on the ST, the public domain *Persistence Of Vision* raytracer is unbeatable.

It may lack the sophistication of an intuitive interface, but the language is relatively easy to pick up and the scenes it produces can be sensational.

Spurred on by the Falcon, the market has undergone a mini-revolution in the past few months and if you are lucky enough to own Atari's new bird and have a maths co-processor, *InShape* is the package to go for. It is one of the most inspirational programs to appear on the Falcon and having pushed past the slightly complex interface, it is hard to stop yourself experimenting with new shapes, textures, bump maps and projected pictures.

As powerful as today's packages may be though, raytracing is still in its infancy.

Atari's Jaguar console can perform texture mapping in realtime and it's possible that future generations of computers will be able to add raytracing to that equation. Then we will find ourselves on the verge of a new revolution – a reality revolution!
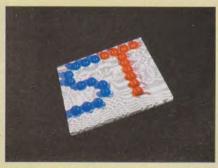
ST SOLITAIRE

One of the most fascinating aspects of raytracing is its larger than life realism. Any substance can be created by simply defining how much light is reflected, how much is absorbed and a colour.

These scenes were put together with *InShape* and *Raystart* and demonstrate a few of the many effects that can be achieved. The plasticy, solid feel of the marbles on the solitaire board is the result of a medium reflection setting combined with a little transparency, while *InShape*'s trumpet reflects much more light.

As you can see from the pictures scattered around the page, raytracers are becoming so good at their job that it's often difficult to differentiate rendered scenes from reality. But take a careful look at adverts or TV programme introductions and you'll be surprised at just how many use raytracing!

IGHT PRICE...

....NO COMPROMISE

PLAYING WI

Maurice Collins looks at graphics and offers a few techniques and ideas to help you along.

Computer graphics isn't just for the professional artist or games designer – no matter how little talent you think you have, you too can produce good looking graphics with the help of your ST and some well-chosen software. Computers open up all sorts of artistic possibilities. While you're unlikely to rival the old masters or come close to even the simplest of water colours in terms of quality, painting on an ST has plenty of advantages.

With a paint package you can undo a bodged brush stroke or effect without having to resort to a scalpel, cleaning fluid or eraser. You can also change the colours in a picture long after they've "dried" – try that with oils! Perhaps most important of all, many computer art programs offer help for less talented artists such as pre-drawn shapes and grids for ensuring accuracy.

Graphics programs are becoming more and more powerful – some like *DA's Vector* are starting to blur the boundaries between traditional paint programs and vector graphics with the inclusion of animation and colour gradients. Other image processing programs like *Chagall* with their highly flexible painting tools, let you import real life images such as scanned photos and use them as the basis for your artistic creations.

You don't need a powerful machine to get into graphics, either. Obviously the Falcon's true colour modes make it an exciting machine for computer artists – with a huge palette of over a quarter of a million colours, colours can be created as and when you need them. On a standard STFM, even in low resolution mode, you only have a choice of 16 colours from a total of 512. Work it out – each colour in the palette is made up of one of eight levels of red, eight levels of green and eight levels of blue, to make 512 possible combinations. With an STE you're better off in that you can apply one of 16 levels of each colour (16 x 16 x16 = 4,096)

but even though the palette is bigger, there's still only 16 colours.

There are two ways around this restriction. One way is to use an art program like *Spectrum 512, Quantum Paint* or *Deluxe Paint* that uses clever palette switching techniques to offer more than the standard 16 colours on screen. The second alternative is to use your loaf and design the palette very carefully from the outset! For example, if you are about to create a picture of a sunset or a campfire, you can afford to include several shades of red, orange and yellow, at the expense of greens and blues. With care, you can create surprisingly lifelike images with only 16 colours.

Naturally you can approach the problem in reverse and create pictures that don't need the full range of colours in the palette. Fantasy type pictures are a good place to start because you can choose any colour scheme you like without appearing any the less realistic. Space pictures are another good idea – typical palettes will include a lot of blues and greys, together with black and white and one or two bright colours like red or yellow for effect.

Don't let this put you off creating landscapes either – browns, greens and yellows are the best choice here but judicious use of the airbrush will

conceal the lack of natural shades.

Don't get tempted to add too many things like cars, buildings or people to the landscape though, as you will simply not have enough colours to spare.

ANTI-ALIASING

Because the computer's screen is made up of pixels on a fixed grid, lines that are nearly but not quite horizontal or vertical can look quite jagged when viewed close up. Lines and edges at or close to 45 degrees are less affected but whenever there is a strong contrast in the line/edge colour and the background, aliasing (otherwise known as jaggies) can be seen quite clearly, making images look extremely artificial.

Art packages like *Spectrum 512* and *Deluxe Paint* have their own anti-aliasing routines but users of other programs will have to do it themselves as one of the last finishing touches to any picture. Essentially

The effect of aliasing on lines at various angles.

one or more intermediate colours are used to blur the sharp boundaries between contrasting colours. Care has to be taken to get the right colour – one with a contrast value in between the others is best – and again the larger palette you have, the better off you are.

Part of a Degas picture showing a good example of anti-aliasing with a medium grey being used to break up the edges of the seabird's wings.

ZOOM AND AWAY

One of the most important features in any art package – and one of the

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TOP TIPS

A little advice can go a long way, so here's a few tips...

CUSTOM BRUSHES

Use custom brushes or blocks wherever you need to fill an area with the same type of colour or effect. For example, if you were producing a dinosaur, you might create several grey scaly brushes and mix them to get the desired non-uniform effect.

PATTERN FILLS

One good way to use pattern fills is to create

combinations of two colours to produce what resembles a third, thus increasing your overall palette.

HIGHLIGHTS

Highlights are the parts of a picture that reflect the light source most strongly. Without that life source – and the associated highlights – a picture will tend to look pretty lifeless. Always have an idea in your mind where the light is coming from and highlight the parts of each object closest to it.

Combining red and white produces pink, not present in the palette.

Notice how much better the highlighted version looks – all for a dab or two of off-white!

TH PICTURES

least used by beginners – is the zoom or magnification function. There are two things to look for: a lot of different levels of zoom (*Prism Paint* has up to 23 times normal) and the ability to use other tools while in close up view. Things like anti-aliasing, highlighting and most of the finishing touches that make a picture perfect would be impossible without a zoom facility – use it often.
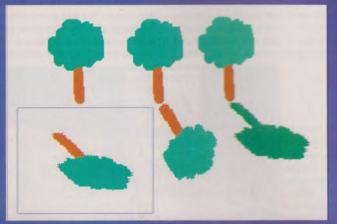

Zooming in on an image for last minute editing.

True colour on the Falcon. Pick a colour – any colour.
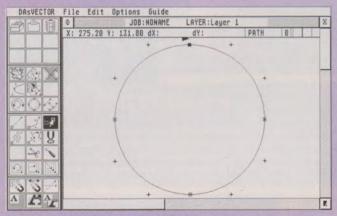
VECTOR VS BITMAP

There's a big difference between bitmap images and vector drawings. Bitmap images can be thought of as pixel "maps" – they record which of the pixels in the image area is being used to build up the picture and which isn't. In the case of monochrome images, each pixel is either on or off, black or white, but in colour images each colour value.

Vector graphics use a different approach entirely. Drawings are made up of instructions and the points are all relative which gives the vector graphic true resolution independence – you might see a jagged circle on screen in your vector graphics package but printed at 300 dpi or more it will look extremely precise.

A bitmap representation of a circle – at this size it's fine but try and enlarge or reduce it and see the distortion.

SHADOW

Shadows are another consequence of lighting and are all too often forgotten whatever type of image you are creating. In our picture here, a simple tree is to be shadowed. Copy the tree as a block, rotate the block throughout the required angle (this will depend on the position of your light source) and then use the horizontal and vertical skew block tools to add some perspective. Finally fill the skewed block with a dark colour – if the shadow is on light green grass, a dark green might be best. Note that if the ground on which the shadow falls is anything but flat and level, you may have to create the shadows manually to reflect the uneven surface.

Reflections – common in water scenes – are very similar and can be created in similar ways or using the mirror tool.

A circle drawn in a vector graphics program.

Creating a simple shadow.

There are only sixteen colours in this image which has a carefully chosen palette.

41

The recent upsurge in image processing programs seems to have masked the lack of paint packages for the ST. Keith Berry goes on a "which" hunt...

There is certainly a scarcity of utilities to actually draw pictures on the ST market, and this is perhaps surprising when you consider the divergence of them over the years.

You may have some of the older ones tucked away, forgotten or abandoned on the assumption that because they are several years old their usefulness has declined. If you have only recently become an STe owner, you may be unaware of the effectiveness of those that are still to be found on the second-hand market or in the public domain.

Let's see what some of these classic drawing utilities can still be induced to achieve...
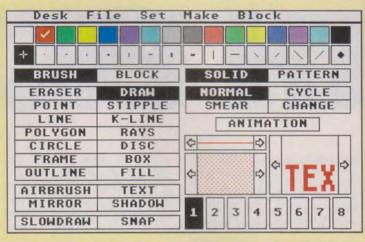
FROM THE BEGINNING

Neochrome and *Degas* were the first art packages to make themselves known to the pioneer ST buyer, particularly as they were often bundled with the computer, the latter program soon superseded by *Degas Elite* (figure 1), a commercial product. All offered a good array of drawing tools for the production of 16-colour screen-size pictures in low resolution, with *Degas Elite* acquitting itself well with four colours in medium resolution – and mono too.

For a pioneer in its field it was extremely versatile, allowing text in either system or GDOS fonts to be added, having predefined mono and colour fill patterns and probably the easiest to use block functions. *Neochrome* is confined to low resolution and its own .NEO format while *Degas Elite* can load .NEO as well as its own .PI* or .PC* graphics files.

The picture of soldiers in figure 2 was created using DEGAS Elite in just a few minutes – the left side of one was drawn on a white background, copied and flipped to form the right side, the rifle added and three copies stamped down, the last one after being flipped by a single press of the

Figure 1: DEGAS Elite's menu screen. Take care when changing palette colours to prevent similar colours making it invisible.

PAINT ME!
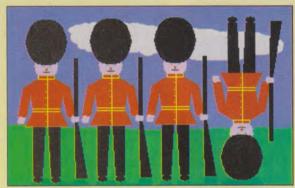
Figure 2: a typical example of how to use DEGAS Elite's Block and Colour Change functions.

down-arrow key. All of the background was drawn straight across the screen with a large brush using the Change option, set to only affect the blank white areas of the screen.

Many utilities came along later with much the same facilities and could produce a final result indistinguishable from that of a *Degas Elite* picture, the variations being mostly confined to the interface with the addition of an extra, perhaps unique, function or two. *Art Director* and *NVision* spring most readily to mind.
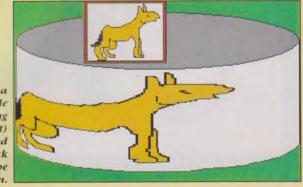
CRACKED IT!

The genre continues to the present day in the public domain program, *Crack Art*. Figure 3 illustrates its menu screen while figure 4 shows one of its most interesting functions, the Tube. A simple drawing (shown in the inset) was loaded into the buffer using the <Esc> key and a grab with cross hairs, and the next workscreen and the Tube icon selected whereupon a widely adjustable curved image appeared. Just how this is pasted into position is currently a mystery – the illustration is the result of a screen grab while the image was still floating!

The programs mentioned so far have been for the production of bit-image drawings limited to screen size. The next advance, in the guise of *Flair Paint* (included on a recent

Figure 3: Crack Art has a remarkable number of features for a public domain program.

Figure 4: a simple drawing (inset) transformed by Crack Art's Tube function.

cover disk), overcame this size limitation in either colour or mono by making use of a GEM window that can be configured to be as large as available RAM will allow. Not only can several screen-sized pictures be incorporated into such a window but the entire canvas can be displayed at once both for viewing and drawing guide lines, a feature sadly lacking in at least two newcomers.

The single colour protected by *Degas Elite*'s Change option was extended to cover any number of *Flair Paint*'s palette colours and widened to include Fills too.

Hyper Paint, which has been bundled by Atari in the Family Curriculum I STe package, handles both Degas .PI* and GEM .IMG files and so is rather easier to learn. GDOS fonts are supported – indeed it will refuse to load if GDOS has not been installed. Figures 5 and 6 illustrate its use as an editor and colouring utility for hand-scanned monochrome .IMG files.

Limited animation of a static view was possible with several of the early packages by means of rotating some of the palette colours, but real multi-frame animation was introduced to the ST by *Aegis Animator*, now a public domain utility, followed by the excellent *Cyber Paint*, which was easy to use as well as being a well-equipped drawing utility in its own right.

MORE COLOURS

Quantum Paintbox was probably the first art program to break out of the 16 colour restriction but it was too prone to "bombing" to become established. Pride of place in the multi-colour category must be taken by *Spectrum 512*, which rewarded an artist who persevered in learning its unusual mouse button and keystroke combinations with some excellent results. At a much less demanding level, it can be employed to considerably enhance pictures imported in Degas format by means of its anti-alias and local colour modifying facilities.

In Germany, a monochrome monitor was bundled with the ST as standard so it is hardly surprising that a plethora of hi-resolution bitmap image drawing utilities originated there, *STAD* and the heavyweight *MegaPaint* being notable examples.

Figure 7: the main menu from Prism Paint 2. The software appears to ensure that its visibility is always maintained.

Figure 8: this table mat with penny-farthing bicycle design is a result of Prism Paint 2's Twine Around feature.

Equally well featured, however, among many are the French *AtaDraw*, *ST Doodle* from the USA (one of last year's *ST Review* cover disk gems) and *Artis* from Austria, the most recent version of which is currently being used as a basis for colour conversion in the imminent release of *Prism Paint 2* as in figures 7 and 8.

Time has passed and the STe is no longer at the forefront of domestic computer graphics and the only drawing package currently commercially marketed for the Atari, *True Paint* (figure 9), is clearly aimed at users of True Colour mode on the Falcon, many of its functions being unavailable to STe users.

Nevertheless there are enough features remaining to enable the creation of 16 colour pictures and its purchase now should ensure that you have at least one useful utility if you take the plunge and buy a Falcon. From its palette menu you can select any two colours, or shades of the same colour, and spread intermediate colours or shades between them.

As illustrated in figure 10, this makes four shades each of grey, brown and green available, and the picture of a barrel and bucket shows this palette put to use. The grass was added to the picture after transfer-

ring the screen to *Degas Elite* for although *True Paint* is undoubtedly capable of drawing grass, the second program's Change and Transparent Block functions made it easier and quicker. Good programs never die – they just get used in odd circumstances...

PLAYING THE FIELD

The public domain program *Picswitch* is invaluable for changing a picture file's format to that of your destination utility. Similarly, *HP Print & Save*, another PD program available from the ST Club, can save a visible screen from within most drawing programs (with the exceptions of *Spectrum 512* and *Paintshop Plus*) as a .PI* file.

Bit image drawings are fine when kept within their own resolutions but to reproduce images at widely differing scales it is necessary to use vector graphics. There has been a growing number of expensive utilities available that do just this – it is even possible to do so with a module from within *Calamus SL*. However there are several drawbacks, the first and most obvious being that if an image is unsatisfactory why trace it? Blobs form at intersections of jagged lines and unless the image is a very simple one it is very difficult to edit or assign desired fill patterns to specific areas.

The time spent trying to overcome these problems could be better spent constructing your vector graphic from scratch and if you have been reading *ST Review* for some time, you will have obtained, as cover disks, both *Easy Draw 2* and *Easy Tools*. If not, check out *Kandinsky* on this month's cover disk...

Figure 9: TruePaint's palette menu showing its Spread feature for multiple shades of the same colour.
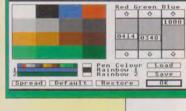
Figure 10: the barrel and bowl was created by TruePaint but the grass wasn't...

NEXT MONTH

Starting from next issue, Keith Berry will be giving you the lowdown on working with each of the popular paint packages – all the tricks that you'll ever need along with hints and tips to let you put together professional pictures...

Figure 5: a scanned mono .IMG file can be loaded into Hyper Paint, coloured and saved as an .XIMG file.
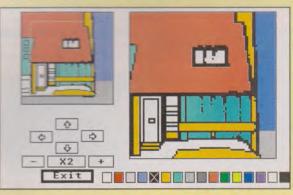
Figure 6: Hyper Paint's Zoom allows editing without having to return to the main screen to change colour or magnify level.

SAMPLING THE

By now, you'll have been playing with the samples that came with the *Replay Stereo* cover disk. Great as they are, it's not the same as being able to record and create your own unique sounds.

To be able to record your own samples, you need the complete Replay Stereo package (see page 89 if you want to order yours). This consists of the all important sound digitiser cartridge, the editing software, Stereo Beat and three informative manuals.

The cartridge contains two quality 8-bit analogue to digital and matching digital to analogue converters. To record a sample, you need to connect a sound source such as a CD player or cassette deck to the inputs of the cartridge. You can use any sound source you want but remember – the better the quality of audio signal, the higher the quality of the resulting sample.

MONO OR STEREO?

To take a sample, first select **New Sample** from the File menu. You'll be presented with the Create File window (figure 1) where you allocate it a sample resolution (8-bit), a space for it, measured in seconds, and whether you want a mono or stereo sample. A stereo sample is twice the size of its mono counterpart which is something to think about if you want to work with vocals or large breakbeats, although stereo samples do sound more accurate as there is a sense of balance and depth.

On a 1Mb machine there is enough space (at 22kHz) for a 30 second mono sample or a 15 second stereo version (these times are roughly doubled or quadrupled on 2Mb and 4Mb machines) or up to ten different samples of various lengths.

Once you have selected your options and named the sample, open it with a double click to show the **Sample Waveform** display. This is

REPLAY THAT SOUND!

Want to record that killer sound you've been searching for? Kevin Pawsey finds that the Replay Stereo cartridge leads the way on your ST.

Figure 1: the Create File window. Do you want a Mono or Stereo sample?

Figure 2: Replay Stereo has many powerful options in the Set Frequency window.

Figure 3: set the audio signal entering the cartridge from the Record Control window.

probably the most used window as it displays a pictorial representation of your sample. Before recording, decide on the frequency. Select **Set Frequency** from the Configuration menu and choose from the large range of frequencies that Stereo Replay has to offer (figure 2). You can either use the standard frequencies for the cartridge or you can specify your own frequency by selecting **Other** and entering a value. The higher the frequency, the higher the quality of the sample but the more

memory the sample uses. There is plenty of scope for experimenting to find out the optimum recording frequency while still maintaining a decent sample length.

CAPTURING SOUND

With the frequency set, press the record button and the **Record Control** dialogue box appears (figure 3). Here you can check the levels from the left and right inputs in a real time display and monitor the sound

source. If the signal is near the bottom, boost the level or you will get unwanted noise; if it's near the top, decrease the level or your sample will be distorted. The record threshold can be set so that the sampler will not be triggered by any unwanted background noise.

One useful function is the **Presample** option. The cartridge constantly monitors the sound but only records once the mouse button is pressed again. It then samples the last few seconds of sound as specified by you in the create file box. This means that you can listen to the sound and then capture it, so making your sampling more accurate.

Once recorded, your sample appears in the **Sample Waveform Display** (figure 4) where you can see the shape of your recording. You can also see how your sample is placed in the stereo field, where you might need to cut sections and where to set up your loop points if needed (see last month's tutorial).

Happy with the captured sound? Look at it in the FFT Window (figure 5) which you select from the Filter menu. This is a 3D picture of the waveform and shows up any glitches and where you might need to filter the sound to remove any unwanted noise. Before trying any of the editing options, make a backup of your sample as all editing functions are of the destructive type...

SOUNDING OUT

The *Replay Stereo* package allows you to be creative, inventive and attempt to do something new. The sound quality is good, it is easy to use and has many features as found on "professional" samplers.
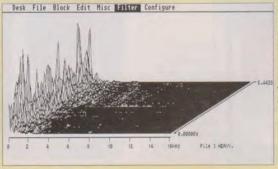
A great facility is the ability to convert two separate mono samples into one stereo sample (see Mono/ Stereo under the Configuration Menu). After recording a mono sample of a sound and converting it into a stereo variant, you could have the left channel playing normally while the right channel plays a reversed sample of the same sound! Weird or what!

There is plenty of material available to record and edit; acoustic instruments, television (watch the copyright laws though), radio, natural occurring sounds and sample CDs where the library is constantly growing.

May you and *Replay Stereo* spend many happy hours sampling together!

Figure 4: identify good loop points in the Sample Waveform display.

Figure 5: the FFT (Fast Fourier Transform) window gives a 3D picture of your sample.

GOOD LIFE

THE PROFESSIONAL TOUCH

There are two main kinds of sampler on the market today. One is the hardware type that contains a floppy disk (and perhaps a hard disk), memory and all the processing needed to record and play-back samples in one self-contained unit. The other is the computer/software combination of sampler such as the *Replay Stereo* system developed for use with your ST. Both have strengths and weaknesses, but hardware samplers generally have extra functions, greater flexibility and more power than their software-based cousins. Hardware samplers can offer up to thirty-two voice polyphony; you could have thirty-two individual samples playing simultaneously or play a complex chord on an accurate sounding grand piano!

MULTISAMPLING

At some stage in your sampling you might encounter the "Munchkin" effect (*somewhere over the rainbow?... Ed*). When you make a recording and try to play it at a different pitch, the sample either slows down or speeds up. Time for multisampling. This is where you record separate samples of the same instrument at different pitches – perhaps every half octave – to make the change in speed and pitch less noticeable.

To achieve a perfect sample, you would need to record a new sample for each individual note but due to memory limitations this is impossible. Experiment to find the maximum number of semitones you can place between samples before the joins become obvious.

On the other hand, if you are not looking for instrumental realism, this effect is one of the most creative aspects of a sampler as it lets you use everyday sounds in totally different ways. This is one aspect of sampling that is very much under-rated...

GOING LOOPY

It is difficult to capture a perfect sample. You may achieve it with 8Mb of sample memory, but if you want to conserve memory you'll need to loop the sample to get optimum results. Looping takes into account that, for most instruments, the sustain and decay parts are consistent. For instance, the flute has a chiff

Sampling is probably the most creative and fun technique used to create music. Kevin Pawsey offers some thoughts on how to get the most from your sampler...

Akai's S01 – the best selling sampler of all time!

BUYER'S GUIDE

In the budget league, what should you be looking for and how much should you pay? The following table should give you an idea – "sh" means that the unit is no longer available new and indicates a typical second-hand price. Sixteen bit samplers generally give a more accurate recording than their 12-bit counterparts.

Sampler	Keyboard?	12/16 bit?	Price
AKAI S700	N	12	£350sh
AKAI S900	N	12	£600sh
AKAI S950	N	12	£999
AKAI SO1	N	16	£750
AKAI X7000	Y	12	£450
CASIO FZ1	Y	16	£650sh
CASIO FZ10	N	16	£550sh
CHEETAH SX16	N	16	£375sh
ENSONIQ EPS	N	16	£750sh
ROLAND S10	Y	12	£250sh
ROLAND S220	N	12	£250sh
ROLAND S330	N	12	£475sh
ROLAND S50	Y	12	£575sh
ROLAND S550	N	12	£650sh
ROLAND W30	Y	12	£700sh
YAMAHA TX16W	N	16	£600sh

of wind as the note is blown and then an even, sustained sound until the note is ended. To create a loop, use the attack portion only once and create a loop once the sound has come to a point where nothing new is happening apart from a drop in volume.

As long as you can make the beginning and end of the loop seamless, the sound can be sustained so maintaining a sense of reality and saving memory. Samplers have many tricks that can help, especially ones with cross-fade and auto-loop functions as they help smooth the

process. Getting good loops is frustrating at times, but seeing the waveform on a computer monitor is a joy compared with the hours spent simmering over a tiny display. Some hardware samplers can connect

directly to a monitor; especially the Roland range. Other samplers can also use your ST to help with looping and other editing functions. With the availability of sampler editing programs such as Steinberg's *Avalon*, the ability to quickly tailor and edit samples is so improved that editing actually becomes enjoyable.

Another powerful function of hardware samplers is mapping keygroups. After putting together a few drum samples you may want to assign each one to a key; eight samples means creating eight keygroups. For each keygroup you can specify the length, pitch, MIDI channel and note to trigger a particular sample. This allows you to have up to sixty-one different samples available on a sixty-one note keyboard!

Keygroups can be doubled up to create entirely new sounds, or sounds can be switched between using a keyboard's velocity. This technique is invaluable for any budding film composer, jingle producer or DJ. It also means that your sampler can become an extremely sophisticated drum machine!

STRETCHING THE LIMITS

Newer samplers offer the facility to "Time Stretch" a sample. This is invaluable when working with a sequencer, sampled rhythms and breakbeats. You can slow down or speed up the rhythm without affecting the pitch of instruments. And how about actually drawing sections of a waveform to fill in gaps and remove glitches!

As you can see, hardware samplers are powerful tools. If you are new to sampling or looking to start, don't worry about which sampler you have. Virtually every sampler can perform the above functions – and you can get some real bargains on the second-hand market. As they say: it's not what you've got, it's what you do with it...

Roland's S220 – an early, 12-bit sampler that can be picked up for a song now...

SLIPPERY SEQUENCING

So you'd like some tips and tricks? Leave it to Kevin Earley, programmer for Hands On MIDI Software...

In the mornings I get up early, go downstairs to my fully equipped 24-track digital recording studio, power-up my rack of samplers, and... about this time I usually trip over the piece of loose carpet on the stairs and wake up to find it was all a dream!

Back in the real world, most of us don't own the gear we would like, but make do with what we can afford. Luckily, there are ways to beat the budget and wring the most from our equipment. But how often have you gone through hundreds of sounds on your synth and found that none are suitable? Or wished that you could afford a decent (read expensive) effects processors?

In this article, I'll assume that you understand the basic functions of your particular software, such as copying, transposing and changing velocity of tracks or blocks of notes. Before we go any further, let me just say that lack of polyphony (not enough notes) is only curable in two

ways; buy another sound source to give you more notes, or (if you are recording with some kind of cassette multi-tracker) synchronise your sequencer to the recorder and record one set of parts at a time until the whole song is on tape. Both have their merits.

DELAYED REACTION

Most affordable synths only have two effects available – chorus and reverb/delay. So if you need delay (echo) on one sound, but must keep reverb on the rest, you're stuck, right? Wrong. Copy the track to a new location so that it plays the same sound, but on a different MIDI channel. Now reduce the velocity to about two-thirds of the original. Most sequencers display the position of an event in bars, beats and "ticks", one

tick usually being the smallest amount by which you can move an event. So to obtain a result which sounds like echo, just delay all the events in the copied track by the correct amount. Remember that you must move every event by the same amount, including pitch-bend and other controllers.

For instance, if your sequencer resolution is 384 pulses per quarter note and you want an echo every two beats (in 4/4 time), delay everything by 768 ticks. Just how you accomplish this will depend on your sequencer but many sequencers have "playback parameters" which affect the outgoing data without changing the original, making it easier to experiment in safety. Even better, your sequencer may support "ghost tracks" or their equivalent. A ghost track uses to the original track's data (so saving memory) but it can be

delayed, sent out on another MIDI channel or have its velocity values altered without affecting the original. However, any changes made to the original track are automatically reflected in the Ghost – so if you change that sax solo, the echo still works! Great, eh!

HALLELUJAH CHORUS

If your synth has no chorus effect, there's still hope. For instant chorus, copy the source track to a new track and assign a different MIDI channel. Pan the original seventy per cent to the left and the copy seventy per cent to the right, using just one Pan command (MIDI Controller #10) at the start of each track. Now use one pitch-bend command on each track to pitch one track *slightly* up, and the other *slightly* down, until natural chorusing is heard.

Some sequencers send a reset command when they stop which zeroes pitch-bend and other continuous controllers, so either play from the start each time or turn this feature off...

BIGGER BOTTOM

Bass is important for giving a song "power", especially in dance or reggae music, but your bass line may be in the wrong key to give enough low end "grunt". You can either use a Subsonic Global Destruction Weapon (*try eating more beans... Ed*), or try the following trick...

Copy the bass track to a fresh track (use the same MIDI channel), then transpose it down one octave (twelve

EMagic Notator will even show delay in milliseconds, just like an effects unit.

Use a Legato facility to flow notes together the easy way.

Using a "Ghost Track", you can create echo by delaying play-back.

STEP BY STEP

DRUMMING UP SUPPORT
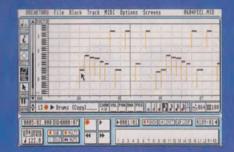
A good way to boost weak snare drums is to mix them with another brighter sound, such as a timbale, tom or bongo depending on the result you need. It can be a good idea to keep drums on individual tracks while editing a song, but this isn't practical on some sequencers.

1 *Whichever sequencer you use, copy the drums on to a new track.*

2 *Delete everything but the snare drum (note number 38 or 40 with General MIDI) from this copy.*

3 *Transpose this track up until it plays the desired note and adjust the velocity to add the right amount of new sound.*

4 *This can be applied to any drum. Also, keep all drum notes as short as possible – most drum sounds only respond to the Note On message.*

semitones) and reduce the velocity to about half – unless you want to be wearing your speaker cones, that is! If possible, to save wasting a track, merge this new track with the original but first delete everything except the notes themselves. This avoids doubling up on pitch-bends and the like. The result is Low, with a hint of Really Low, to give your bass serious attitude. If your sequencer has a "logical" editor then all of the above can be achieved in one pass; see the boxout.

LOGICAL EDIT ON CUBASE

Select a track and call Logical Edit. Select equal to: NOTE in the first column of Input Parameters and leave the rest blank. This tells *Cubase* to work on just the notes, and ignore any other type of event. In the third column of Operations (next row down) select "minus" and "12"; this will deduct 12 semitones from the original notes. Lastly, at the bottom of the window, select "Insert" so that the generated notes are pasted back into the track. Click on "Perform" and when completed, try out the result. Logical edit is a very powerful tool, and makes the sequencer do the work for you, so don't be afraid to try it out.

This Logical Edit setup will give your Bass lots more Bottom!

THE "NO EDIT" EDIT

If you can't find the right sound for the job, try the above track copying techniques to make two sounds on different MIDI channels play the same part, then vary one sound at a time, until the combination of the two gives the desired effect!

ROLLING BOTTOM

For that thundering Legato Rock Bass sound where all the notes run into one another (legato means flowing), try your sequencer's "Force Legato" function. Rather than trying to play all the notes the right length, play staccato (stabby) but concentrate on your timing. This way you won't need to quantise the life out of your playing, but use Force Legato to make the notes join up afterwards.

LIFT AND SEPARATE

If your synth only has stereo outputs, use the MIDI pan controller to pan one track to the left, and everything else to the right, so you can process just one sound separately. The only drawback is loss of "stereoness" to the sound. Alternatively, when recording, if your vocal has trouble

standing out from the track, try panning everything away from the centre (except bass and drums) – this leaves a "psychoacoustic hole" which keeps the vocal audible without it being too loud against the backing – a triple word score for that one, I think!

ATTACK THAT SOUND

If you need to reduce the time between pressing a key and the first volume level being reached, commonly called the attack time, there are different ways to do it. If this effect is only needed in a couple of places, use Expression (Controller #11, if your synth responds to it) or Volume (Controller #7). If your sequencer has the ability to "draw" MIDI continuous controllers, this is the time to use it! Set the value to zero just before the note plays, then slowly increase it, fading the note up to the normal level.

If you own a GS-compatible sound module, like Roland's Sound Canvas, there is a specific message to set the attack time for a part/channel: Controller #99 – value 01; Controller #98 – value 99; Controller #6 – value 0 to 127, with 64 being the default. To work properly, these commands must appear in the above order, so use your Grid or List editor (where events appear in a long list of data) to place events precisely. Remember to reset the attack before the next song!

FINAL BIT

The best thing about these techniques is that they don't rely on any particular sound source or its effects for their result. If you change your synth at a later date, it should be a simple matter to recreate your songs on the new one. Some people dislike sequencers because they can play things that humans can't. But it is this very ability to break all the rules, and just think about the sound you hear, that has led to some of the more interesting musical developments in recent history...

MULTIPLE MIDI PORTS

If you are lucky enough to have two multi-timbral sound sources, you are wasting their potential unless you can use all the MIDI channels on both units at once. It is easy and cheap (under £30) to add another independent MIDI Out port using a device fitted to the ST's modem socket. This allows each device to have its own separate MIDI cable, and works with most mainstream sequencers. I use one every day... Contact "Hands On" MIDI Software (0705 221162) or Club Cubase (081-368 2245).

Breakthru 2 is the latest sequencer from Software Technology. With an excellent pedigree, will it sew up the mid-range sequencer market? Kevin Pawsey finds out...

BREAKTHRU THE SOUND BARRIER!

The original version of *Breakthru* combined MIDI sequencing with a sample playback facility and was widely praised by musicians and journalists alike for being easy to use. Yet the power was achieved with a price pegged at a reasonable enough level to remove the necessity to sell the odd internal organ or two. *Breakthru 2* has all of this and more...

INTO THE SEQUENCER

Anyone that has used any sequencer from Software Technology (previously Gajits) will feel right at home here. Staunch *Cubase* and *Notator* owners – with holes in their pockets to prove it – will be used to working with a large range of parameters and options. This is fine for complex pieces of music, but can often lead to less time spent actually playing and composing. The first thing you notice about *Breakthru 2* is how immediate the software is. You can start composing or arranging straight from the box while still having the necessary functions to edit your music without being overbearing and confusing. The interface is clear and friendly and you can get deep into the program before needing to

One clearly presented Track List screen. The start transport icon changes to stop while the sequencer is playing.

consult the manual, which happens to be well written for a change! Being able to save and load your setup also speeds up the process at the start of a session.

Breakthru 2 works in high or medium resolution although the former is preferable for working with a score; the screen does get rather busy. *Breakthru 2* uses individual screens assigned to functions rather than the window approach used by

many other sequencers. The Track List screen is where you can select any of the available 64 tracks along with its MIDI channel, program and bank numbers and MIDI volume level. There is also the marker list, a cue sheet of up to 64 song position pointers that are displayed as bars and beats. You can, of course, work the other way around and use the marker list as a template for your

songs and compose the sections around this. The now universal tape transport-style play and record controls and MIDI/sample activity window are present along with the time signature and tempo information boxes.

WHAT A FEELING!

The quantise functions available are easy to use yet very effective. Just click on the note value of your choice and specify a strength which determines how far note events are shifted from their original position. Lower values ensure that music ends up less mechanical sounding. If you want the completely opposite effect, use *Breakthru 2*'s new Humanise function which simulates the inaccuracies that occur in human playing and adds feeling to your piece – very handy if you have step-entered a part, especially drums.

EDITING FUNCTIONS
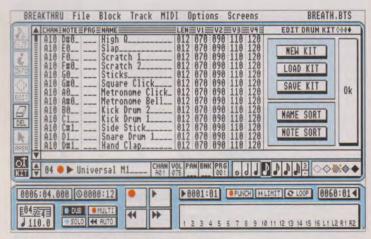
New to *Breakthru 2* is a multi-track score display. You can choose a single or double stave for each track and the type of clef and key signature for each stave. By using the Score Track

You can edit the Drum Kit page for any instrument that has a rhythm section.

USING THE SCORE EDITOR

Breakthru 2's Score Edit screen is a doddle. You can use "Diamond Drag" editing to move notes recorded in real time or you can step enter notes – very handy if entering music from a score – as shown here.

Select Score Editor from the Screens menu. Set the current song position to the place where you want to start entering notes. If you need a double stave for a piano part, go to Score Info and select your split point.

Click on the "Keyb" icon. This will turn black, the tape recorder transport will disappear and the bottom of the screen will be replaced by a five octave keyboard.

The size of note entered depends on the setting of the Note Size selector. Chords can be entered from a MIDI keyboard or by holding down <shift> and clicking on the virtual keyboard. To enter a rest, press <space>.

Each block in the Song Arranger screen represents a bar of a track that can be copied, cut or deleted.

important and *Breakthru 2* handles this with the Song Arranger screen. A horizontal series of bars is shown for each track; a solid box shows that MIDI data is present while an outlined box represents an empty bar. If you use a word processor, arranging a song is easy – highlight a selected area and change the bar order by using block operations such as cut, copy and paste.

Once you have arranged your song, it is possible to specify a different tempo for sections of the music. The Tempo Map screen displays a graph of tempo against song position, by far the simplest way to alter the tempo of a song on any sequencer.

VERDICT

Breakthru 2 has everything that a musician could want from a sequencer and is certainly an improvement over the original. While screen updates are on the slow side, and the score printing kit will only be welcomed if the price is sensible, you'll be hard pushed to find a better sequencer in this price range. System Exclusive and graphical controller editing, disk utilities and a Juke Box facility that allows you to put together a set of songs for live work combine with all the other functions to give an easy to use, yet powerful, sequencer that musicians will love. Steinberg and EMagic – watch your heels!

✔ **Great blend of sample player and sequencer**
✔ **Allows you to create music as a musician**

PROS AND CONS

✗ **Screen updates could be quicker**
✗ **Lacks a score printing facility**

"A powerful, easy-to-use sequencer – tailor made for musicians."

NAME: BREAKTHRU 2
COMPANY: SOFTWARE TECHNOLOGY LTD
CONTACT: 061-236 2515
PRICE: £149.95
MIN MEMORY: 0.5MB

EASE OF USE	✪✪✪✪✪
DOCUMENTATION	✪✪✪✪✪
EFFECTIVENESS	✪✪✪✪✪
VALUE FOR MONEY	✪✪✪✪✪

OVERALL **85%**

Info box it is possible to control many aspects of the display for each individual track such as score layout, split point, brace type and direction of stem. There is a Score Printing kit under development (due for release in February) that will allow you to obtain hard copies – *ST Review* will update you on this shortly.

Other editing options include the Step and Drum editor screens. The Step editor uses a vertical keyboard that shows the note range and a series of bars in which note data can be entered via a MIDI keyboard or the on-screen version. This is very easy to use and offers a real alternative for musicians not wishing to work with notation. The Drum editor consists of a grid with a scrollable list of drum sounds and a horizontal scale indicating song position. To input note data, the mouse is used to control five "diamond" icons each representing a value as set in the Drum Kit menu. This is where you can specify parameters, such as MIDI channel, note and velocity data for your specific sound module or drum machine. It is also possible to use internal samples as part of a drum kit.

ARRANGEMENTS

Being able to change the order of sections in a song is extremely

SAMPLE PLAYBACK

Breakthru 2's sample play-back facilities really make it stand out from the crowd. While it's designed to be used with a sample creation system such as AVR's *Replay 16* package, you can buy samples off-the-shelf if you do not have access to such a sampling package.

Breakthru 2 is extremely processor intensive when samples are played along with MIDI information. So, the fewer samples that you use, the higher the play-back quality as the software can concentrate on improving the sound. Short, percussive sounds are best as they don't continuously tie up the processor. If you are short of a drum machine, *Breakthru 2* could solve your problem!

Virtually all sample formats can be loaded and played back although stereo samples have to be converted to mono. Up to 128 samples can be loaded into memory at once, although available RAM will play a factor in this. You can direct the sound to a TV or monitor if you are STFM owner or through a sample cartridge if you have one. If you own an STE or TT, you can select STE stereo mode and direct your samples through the 8-bit DMA sound chip and phono sockets to an amp and speakers.

You can adjust the volume and tuning, place samples in the stereo field and listen to loaded sounds. Being able to save these as sets means that samples can be loaded automatically when you load a song. Working with samples is similar to a MIDI instrument – select a sample channel (L, R, LR, or RL) instead of a MIDI channel number and allocate it a program number.

The Sample Palette screen. Breakthru 2 can load and play virtually any sample format as long as you have the hardware.

Software Technology is the leading UK-based music software company. Never heard of it? Perhaps the name "Gajits" gives you a clue as Vic Lennard finds out...

Five years ago, you'd have needed a calculator to add up the number of ST software houses based in the UK. Even so, music programs were very much the domain of Germany, in the shape of Steinberg and EMagic (then C-Lab), and the USA, with Dr. T, Hybrid Arts and Passport.

Then, in November 1989, a UK company with the unassuming name of Gajits appeared with the aptly-named *Sequencer One*. Although retailing at £90, it represented good value for money against the likes of Steinberg's *Pro 24* and C-Lab's *Creator*, undercutting them by some

Three men and a business: (left to right) Alan Broady, PatchKing programmer; Greg Salisbury, director and main programmer; Alan Ackers, director in charge of marketing.

IN SEQUENCE

seventy-five per cent! So how did it all begin?

THE STARTING LINE

Alan Ackers, Greg Salisbury and John Llewelyn met while at university. "*Sequencer One* started as a series of final year degree projects, at the end of which we had the track screen." explains Alan. "Another six months of development led to the release program and as the three of us shared a house in South Manchester, Gajits started trading from there."

Having a product that you believe can take the world by storm is one thing; marketing it is another matter entirely. How did Gajits make the public aware of *Sequencer One*? The Enterprise Allowance Scheme helped the three of them to get started as a

partnership initially and to get the advertising for their new product off the ground. "We placed full page adverts in *Sound On Sound*, *Music Technology* and a now defunct mag called *MicroMusic*." comments Alan. "The initial response was very good; the sequencer was selling in tens every week. We could have probably charged more!"

If you have heard of Gajits, *Sequencer One* may not have been the reason – especially if you happen to own a Roland "D" series synth. In 1990, Gajits approached Roland with the proposal of creating editing software for the D-10, D-110 and D-20. "We worked together on the *3D* project. Roland told us what they wanted to see, loaned us the necessary equipment and actually produced sounds with our software."

Alan relates, relaxing in the rather business-like atmosphere of Software Technology's offices. This was followed up by *CMpanion*, an editor for the MT-32 and CM sound modules. "Roland actually distributed *CMpanion* for use. It did quite well." adds Alan.

STAGE TWO

Having established itself as a leading software company for the ST, Gajits decided to branch out onto other platforms. "We didn't want to rely on one product for all of our sales. The next step we took was to start creating software for the Amiga." admits Alan. "We converted the editors first followed by *Sequencer One*."

Perhaps surprisingly, sales of ST-based products have overshadowed

STEP BY STEP

THE HISTORY OF A SEQUENCER
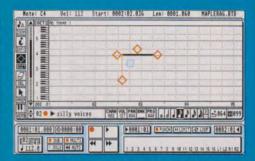
From a humble beginning, Sequencer One really has grown into a world-beating package...

1 *Lift off – Sequencer One, the result of a project at Manchester University, offered simple operation but limited facilities.*

2 *Sound addition – Sequencer One Plus added a basic, four-voice sample playback facility along with a jukebox feature.*

3 *Up market – Notice the more professional appearance of Breakthru which also sports the excellent Diamond Drag™ editing.*

those of their Amiga counterparts – and by quite a margin. "We are quite unusual in that respect. Most companies we know are always going on about how ST sales are low and how Amiga sales knock them out of the water."

Various minor updates to *Sequencer One* ironed out reported problems, but the program really went into orbit on the back of being put on the cover disk of a magazine. This effectively placed *Sequencer One* into the hands of tens of thousands of ST owners, especially as the cover disk version incorporated a basic but usable sample play-back facility to appeal to more than just MIDI users. What ensued was a spate of upgrades to the newly-released *Sequencer One Plus* and continued prosperity.

CHANGES

Most programmers keep a "wish list" of ideas to improve a program. Is this how Gajits work? "In a way, yes. With *Sequencer One* we always had registration cards which had a nice big space for comments at the bottom. We paid attention to those whenever they came back and kept a tally of

the different comments. The main addition people wanted was a better method of editing." says Alan. "The one thing that all other programs had in common was that you had to go into different modes to do different things to a note." This led to the highly innovative Diamond Drag™ editing system where four on-screen diamonds give you complete control over the important aspects of a note; velocity, length, pitch and position.
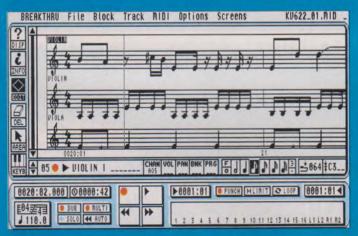
The improvements didn't end there. A visual tempo map was added – quite an omission from *Sequencer One* – along with a track solo function, better quantise (auto timing correction) operations, punch in/out recording and a jukebox facility for loading in a number of songs. But the biggest addition was that of a four voice sample replay facility; while there were a few other products that did this at the time, none of them combined sound play-back with a MIDI sequencer.

THE BREAKTHROUGH

With *Sequencer One* and *Sequencer One Plus*, Gajits had a substantial sequencer market share, but aimed

mainly at the budget end. "Both of our existing products were associated with the budget market and we wanted to break away from that – or should that be 'breakthru'," laughs Alan. "But we didn't want to totally throw away everything *Sequencer One* stood for, like ease of use. We wanted to build without losing the users we had."

The graphics underwent a serious facelift, taking on a far more hi-tech look, and the team again considered comments from both users and reviewers. The final result was an increase in the number of tracks, substantially better sample replay quality with support for AVR's Replay 16 cartridge port-based hardware and the addition of a music notation editor while keeping the medium resolution colour support, something that none of the other notation-based programs offered. "It's the musician's mentality really – they'll mortgage the house to buy MIDI gear and synths but won't spend money on a mono monitor!" jokes Alan.

Breakthru 2 is the latest in the product line (full review on page 48 of this issue) and now sports multi-stave scoring, graphical MIDI Controller editing, an on-screen MIDI data input fader, a Humanise facility, disk utilities and improved editing. With an upgrade cost of £40, Software Technology

have found that some twenty-five per cent of *Breakthru* owners have upgraded to version two.

A score printout module, in the form of a desk accessory, will be available early in 1994 and further improvements, including lyrics and on-screen symbols, are intended.

THE FUTURE

Although the PC market is being carefully eyed, Software Technology certainly intend to continue to support the ST. For instance, there's a new series of editors under the name of *PatchKing*, with six already released and another two being added each month – full review within the next couple of issues.

And the Falcon? Have Software Technology considered using its specialist hardware? "Yes we have, but that's all I can say for the moment." comments Alan, enigmatically. Looks like we'll have to wait and see...

Too tidy – are the offices always this immaculate or did they know we were coming...

ST power – Alan uses Superbase Professional for the customer database.

Mighty trio – Software Technology's sequencers have made it a force to be reckoned with

4 *Full score – Breakthru 2 now supports multi-stave scoring with a desk accessory for printing promised by March 1994.*

This month continues the Atari ST Review campaign to get every ST owner to upgrade the memory of their machine to at least 1MB and to have all those useful items – at the right price!

ST UPGRADE

12 REASONS TO BUY FROM ATARI ST REVIEW...

All the products offered by ST Review have been carefully selected by us as the best in their class. But top quality does not mean top price. Thanks to our huge buying power we can deliver top value for our readers too.

✓ *All memory boards are populated with memory*

✓ *All memory boards are individually tested*

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✓ *Experienced technicians are available for advice before placing an order*

ALL MEMORY UPGRADES INCLUDE FREE DISK!

Each memory upgrade comes with a free disk including memory test software, RAM disk, print spooler and disk copier, all to ensure you can make the most of your new memory upgrade...

TIME WAITS FOR NO-ONE...

Can you imagine looking at your wrist and finding no watch? Well that's how your poor ST feels every time you switch it on!

There are two ways of setting your ST's internal clock. The hard way is to use an Auto folder program that requires you to type in the date and time whenever you switch on your computer. The easy way is to use one of our clock cartridges; set the date and time once and that's it!

So why is time so important? Well apart from being able to run nifty little programs that display the time and date on-screen while you're working, every time you save a file it gets stamped with the correct time and date. Just imagine how easy that makes looking for the document you wrote last June, especially when you can't remember the correct title...

And there's more. Some programs like the Write ON! word processor we gave away on the cover disk of issue 13 will automatically insert the time and date into your documents – as long as the internal clock has been set.

The ST Review clocks plug straight into the cartridge port of any ST. The slightly more expensive model comes with a through port which means that if you have an audio or video digitiser, or a music program with a copy protection dongle, you can just plug this straight into our clock cartridge.

Go on – make time work for you....

FREE DELIVERY!

FIRST IMPRESSIONS

ROBINSON'S REQUIEM

A sneak preview of the latest adventure from Silmarils and some more good news for ST and Falcon owners alike. Richard Barton reports...
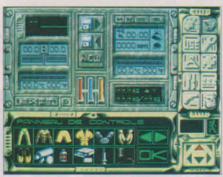
Realistic landscapes, but an unfamiliar land. The user interface is similar to other games, but there's more to consider than with most.

Survival is the name of the game in the latest adventure to come from those clever French people at Silmarils. As has been said many times before, the French have a knack for producing clever, well presented and well thought out adventures, and *Robinson's Requiem* looks like continuing the trend.

As Robinson, a government agent, you have been sent on a reconnaissance mission to an unexplored planet. There is a catch, though. Your own government have decided that they no longer want you around, and the real point is that they've sent you to your death! However, you are made of sterner stuff than that and you're not going to just lay down and die...

The planet you are heading for is a prison world and as your ship is out of control, you have to bail out into a thick, hostile jungle. All you have with you is a survival kit, which contains medicines, tools and a microcomputer strapped to your chest that keeps you informed of your physical condition.

Some of the many different creatures you meet on the planet will

It is important to keep a check on your health using your microcomputer.

help you in your quest to survive and escape, but others definitely will not. Some animals are half dinosaur and half hybrid monsters. Their flesh provides food and their skins can be made into clothing. All of the other prisoners are human and are left to roam and fend for themselves on the planet. It is here that you may find allies to help you, but be careful as some are looking after *numero uno*.

Apart from the Cyborgs, who are responsible for protecting and maintaining the prison, there are four tribes of aliens on the planet. Each holds one of the elements required to enter the Cyborg store. You have to

retrieve these elements to stand any chance of escape. Remember, this world is tough and if Robinson has to amputate one of his own limbs to survive, he'll have to do it. After all, he has all the equipment in his medical kit should it be necessary!

Robinson's Requiem is lavish and, if the pre-publicity is anything to go by, a very well thought out game. It is always a little difficult to judge a book by its cover, but Silmarils do usually come up with the goods and, like a favourite author, it's rare that a new work disappoints. Only time will tell, though, so look forward to a full review when the program is released.

HOPE FOR THE FUTURE?

If you're in any doubt about the future of the ST or the Falcon, here's some encouraging news of new releases for both machines...

There's a lot happening in the ST world as far as new programs are concerned. All we keep hearing is that software houses are dropping the ST as a platform for new ones. True, there aren't as many new games around, but those that are appearing are quality titles, many of which are worth adding to your collection.

As well as *Robinson's Requiem*, **Silmarils** (marketed in the UK by Daze) are soon to release *Ishar III*, the next instalment in the successful series that started with *Crystals of Arborea*.

Goal!, the much talked about and overdue soccer simulation, written by Dino Dini, is due for release very soon by Virgin Games and Hulk Hogan is to appear in a film tie-in, *Suburban*

Commando, from Alternative Software.

Also on the horizon is *Genesia* from Mindscape, a strategy game based on the "god" games and due for release very soon.

Some of the above, especially the Silmarils games, will be available for the Falcon and there is still talk of a Falcon version of *Pinball Dreams*, a very successful simulation already available on the PC and Amiga.

The best way to secure a future for ST and Falcon games is to buy them, as software houses are money motivated. If they can see a return on the investment needed to develop a game for the platform, they'll produce it – budgets for top CD-ROM titles on the PC are approaching $1,000,000!

The Cyborgs are there to maintain the prison. You have to defeat them.

57

GAME PLAY

Since the days of the BBC Micro, the sequel to Elite has been awaited and is being hailed as the best game ever. Is it worthy of the title? Tony Kaye takes it for a test flight...

Many people took the long route to becoming an ST owner. Anyone over the age of 25 will remember the old days of 8-bit gaming with machines like the Sinclair Spectrum, Commodore 64, Atari 400/800 series and the BBC Micro. Some may have dim and distant memories of the Oric, MSX, ZX81, Acorn Atom or even the Dragon! Almost everyone with a computer in those days either played

ATARI ST REVIEW
ESSENTIAL BUY

Docking is a major part of the game. One wrong move and it all ends abruptly...

FRONTIER

or heard others rave about *Elite* on the BBC and wished they had one just to play this game. Other aspects of the BBC Micro can be argued, but the fact that *Elite* was just about the best game at the time is hard to dispute.

The original game brought wireframe 3D polygon graphics – unheard of in the mid 1980's – and a realistic environment to the gaming world. Many games tried to compete, but, until now, none have really succeeded.

The 3D spaceships added to a very playable game making it very difficult to switch off – you just had to keep playing.

IN WITH THE NEW

Frontier – Elite II is massive, despite coming on just two disks. There are over 100,000,000 stars in the game and each one is named. These are not just random either. Due to the author's love of astronomy, they are as accurate as possible using astronomical data books and accepted theories of guesswork. The sheer size of the universe means that the game has no set paths, no plot to follow and no right or wrong ways to play. The structure is totally open-ended, making it different each time you start a new adventure. Because of this, you'll never see a

complete solution offered in any magazine!

This game took five years to write. David Braben locked himself away to create the game that he wanted the first one to be – and he has succeeded. It runs faster than the Amiga 500 version by about 10 or 15 per cent and, because it was released later, some of the bugs have been fixed. The two versions are visually identical, due to the use of similar code as both machines are both based around the 68000 processor. Clever programming allows even a standard ST to display the game in 4,096 colours, so the graphics are very impressive indeed.

PLOT?

As already explained, *Frontier – Elite II* has no plot to follow. It does, however, have a basic explanation of why you are there in the first place.

In an attempt to make a man of you, your grandfather bequeathed you a small amount of money and a space ship. Nothing special, but enough to get you started as a freelance trader, bounty hunter, taxi cab, pirate, mercenary or anything else that takes your fancy. What you do is entirely up to you, but the idea is to be successful. Each of the different trades has its own risks and varying reward potential – the greater the

Sirocco Station is where the action begins.

You can select your destination by moving around the map, but make sure you have enough fuel first.

Trading is necessary to survive – and an ideal cover for other operations. Buy up animal skins as they fetch a good price

The bulletin board has many offers including a request for passage to the Formalhaut System.

The military are always on the look-out for people to deliver messages or documents, but the fees are non-negotiable.

You can upgrade your ship when you can afford it.

risk, the higher the payment. Of course, the more danger you put yourself in, the more chance there is of ending up in jail or drifting helplessly in space at the mercy of other, less friendly elements. There are over 1200 other planets that support life in this universe, so the people you meet are more varied than Oxford Street on the first day of the sales.

The year is 3200. An uneasy peace has existed between the Empire and the Federation for the last 400 years, but it is a universe of spying and

minor squabbles (some not so minor!). The cold war rages even as you start so you could, if you wished, form an allegiance with one or other of the major powers. This would involve travelling into enemy territory delivering mercenaries and weapons or even destroying strategic targets. This is rewarded well, but the risks are high and the chances or returning undiscovered are not great. Your first mission will be relatively simple – a spying run or delivering a parcel or message from one place to

another – but as your reputation grows (or diminishes if you make a complete hash of the job), so do the jobs on offer.

Travelling across hyper space is easy, provided you have enough money to buy the fuel for the trip. Once you arrive, you can log onto the local bulletin board to find out what is on offer. Choose the offer that is of most interest and speak directly with the advertiser to find out more. It is here that you will realise that you should try to gain

VERDICT

It is difficult to sum up *Frontier – Elite II*, for it's a trading game, a shoot 'em-up and a puzzle game all rolled into one without having too much bias towards any of them. In short, it's the best game to become available for the ST for a long time – great graphics and an incredibly huge play area that make it totally compulsive. If you only buy one game in 1994 make it this one, as it is as close as you will get to the perfect game.

ELITE II

You can take off after obtaining clearance, but don't be too hasty with the missiles.

Your destination is finally in view after a leap through hyper space.

enough money to upgrade your ship to include passenger cabins, as some of the advertisements are for parties wanting to travel from one place to another.

This is an ideal cover for a spying mission and increases the profit margins, but beware – they don't all just want to go on holiday!

Upgrading your ship offers as much of a range of choice as the rest of the structure of the game. You can add just about anything from a new engine to a laser and missile array if your funds will allow.

Control is a little difficult at first especially if, like this reviewer, your copy came without a manual – just a Gazetteer, a book of stories, a T-shirt offer and a registration card – as the gameplay is relatively slow and involved. However, there's so much to *Frontier – Elite II* that you'll be playing it for a long time to come. So many times in the past, we've seen visually exciting games that have had a great deal of effort put into making them look good but the gameplay has been forgotten.

All of the options open to the player make this a program that is visually stunning, yet playable and compulsive. The beauty of the open-ended structure is that you can never complete the game – be prepared for many late nights in front of the keyboard.

✔ Immense playing area
✔ Graphically superb

PROS AND CONS

✘ Difficult to control at first
✘ Updates can be a little slow

"Quite superb – as close to the perfect game as you'll find!"

NAME: FRONTIER – ELITE II
COMPANY: GAMETEK
CONTACT: 0753 553445
PRICE: £29.99
RELEASE DATE: OUT NOW
MIN MEMORY: 1MB

GRAPHICS	●●●●●
SOUND	●●●●○
VFM	●●●●●
PLAYABILITY	●●●●●

OVERALL **96%**

More power to your wallet! Dave "Quid's In" Jones checks out the latest on the budget scene...

VFM

SPACE CRUSADE

ATARI ST BUDGET BUY

GBH • £9.99 • 0742 753423

IN BRIEF: It's time to enrol in the Space Marines and fight the alien foe. *Space Crusade* is based on a board game licensed from the Games Workshop, famous for their range of role playing games.

This is a successful conversion of a game that is still selling well in the shops, and adds a new dimension to it. Up to three people can play, with the computer taking the part of the alien. Following the rules of the original closely, the objective is to lead a team of men through the range of missions. Each completed mission is rewarded with honour badges and four of these can be traded in for a higher rank until the highest possible rank of *Captain Supremus* is achieved. A range of weapons is available to you with the commander getting the best of these.

ST REVIEW COMMENT: If you like board games, but can't be bothered to get them out of the box and set them up, then this is for you. It offers all of the fun and challenge of the original without the hassle.

Games Workshop are renowned for quality and this is no exception. Although it's a board game and not a shoot 'em up, don't expect to be using your reflexes more than your brain and the luck of the dice.

✪✪✪✪

The Space Marines need you. Race around the board and destroy the aliens in Space Crusade.

God for the day is the unusual offer from Powermonger.

POWERMONGER & WW1 DATA DISK

HIT SQUAD • £14.99 • 061-832 6633

IN BRIEF: God games have been out of the limelight for a little while, so it's nice to see this Bullfrog effort making an appearance, and at a reasonable price too.

You decide how you use your subjects to create a happy community and defeat your enemies, eventually becoming the ruler of the land. Computer controlled opponents or your "friends" are competing to do the same, and only one of you can win.

The original game is set in a time when genocide was commonplace and anyone who opposed it could easily become one of the statistics. Rules are made by the Powermongers themselves and virtually anything goes. The World War One data disk included with the package is slightly different as it is based on the activities of the Great War itself. For those of you who failed history, it took place between 1914 and 1918!

ST REVIEW COMMENT: Value for money in a box. This is a good game, downgraded only by the small, fiddly controls – some of the icons are so small you can hardly see them! However, it is great fun and quite an involved game that should keep your attention span for a while to come.

✪✪✪✪

HARD DRIVIN' II – DRIVE HARDER

HIT SQUAD • £9.99 • 061-832 6633

IN BRIEF: Frequent visitors to the arcades will know *Hard Drivin'*. The fairest way to describe it is "Lousy graphics, poor sound, but great gameplay and good fun". *Hard Drivin' II – Drive Harder* is little different, although there are some improvements to the original.

New tracks and a track editor to design your own are included and the biggest addition is a two-player link mode that lets you connect with a friend using a Null Modem cable and play head to head. The other computer can be another ST, an Amiga or PC. The cars no longer appear through the hills as with the first game but, apart from a few minor changes, the game looks and feels like the original.

There are two different modes of link races. The standard race has the usual computer controller drone cars plus one that is controlled by your opponent; the championship race is head-to-head with no drones. Championship racing has no collision detection, so the first over the line wins.

ST REVIEW COMMENT: The added bonus of the new tracks and the editor make this worth buying, especially if you take advantage of the two player option with another computer.

An accurate copy of an arcade game that won through despite its poor, blocky graphics because it had something that is missing from a lot of today's games – player appeal. It's a game that you will want to play. You'll find that well drawn, graphically outstanding games are put to one side for another quick attempt at the latest track...
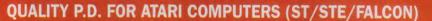
✪✪✪✪

The graphics don't recommend Hard Drivin' II, but the gameplay makes it worth the effort.

PD SCENE

*The public domain games world is as buoyant as ever
– just leave it to Nial Grimes to find the best...*

ALIENS

LAPD • DISK NO: G.262 • £1.50 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: If you had to choose one film that was built to be a computer game, it would have to be *Aliens* and this game is designed to bring everybody's favourite mercenaries to your very screen. The show starts with a suitably atmospheric intro, featuring grabs from the film and plenty of sampled dialogue. The screen then clears to reveal... a board game. Yes, one of the most tense, action-packed films of the 1980s has been immortalised on the ST as a souped-up chess clone!
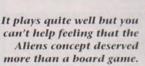
The object of the game is to move your team from the left of the screen to the exit on the right. Each man (or woman) has two moves per turn that can be used to waste an alien or progress towards the goal. There's a limitless supply of slimy stomach crunchers, so it makes sense to use your head as well as your trigger finger. The graphics are a little bit rough at the edges, but some neat sampled sound effects bring things up to scratch.

ST REVIEW COMMENT: "I must say that the prospect of playing a sci-fi board game did not thrill me, but *Aliens* is quite exciting once you get involved. The sampled sound lends atmosphere to the proceedings and the difficulty level is spot on."
✪✪✪

Digitised stills and dialogue from the film lay down a good atmosphere for the game.

It plays quite well but you can't help feeling that the Aliens concept deserved more than a board game.

Cartoon style graphics are the order of the day, but Mug's Game packs less than a knockout punch in terms of gameplay.

IT'S A MUG'S GAME

LAPD • DISK NO: G.314 • PRICE: £1.50 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: The popularity of games like *Street Fighter* has proved that people like nothing more than a good beat-'em-up. *Mug's Game* takes a more traditional approach than Capcom's classic by pitting you against half a dozen suspicious looking characters in the boxing ring.

There are no moves as such and having chosen your character it's just a case of hammering the fire button as hard and as fast as possible until one or the other gives up. Move too close to your opponent and the referee (spoilsport that he is) jumps in to break up the squabble. Visually, the game isn't bad at all – the ring is viewed from an overhead perspective and the animation on the knockout scenes is quite amusing, being more cartoony than anything else.

ST REVIEW COMMENT: "*Mug's game* is not all bad, but it could definitely do with some fine tuning – a tournament would be nice as would a bit of variation on the joystick annihilating gameplay."
✪✪✪

The first few levels are easy, but the pace soon hots up and it's almost impossible to beat the computer players.

SNOTT '93

LAPD • DISK NO: L.43 • £3.00 • MEMORY: 0.5MB • LICENCEWARE

IN BRIEF: Those of you with good memories may remember the attractively named *Snott* appearing as a commercial title some years back. This Powerfist release is a new version of that very same game, remixed and improved to take the licenceware world by storm, or so this 'ere press release says...

In play it's a fairly straightforward platform game. Your green and revolting character can be slithered in all directions

Slimy graphics and sedate pace aside, Snott is a very competent platform game.

and can take to flight by pushing the joystick upwards. The idea is to find a set number of orbs before escaping to the safety of the next level.

The gameplay itself is quite simple, but a tight time limit makes it very tricky to master. As is the case with most *STOS* productions, the control system is far from perfect, but the graphics are pretty good and it certainly had me hooked for a few plays.

Snott is not a thrill-per-minute game, but it provides a good balance of action and strategy.

ST REVIEW COMMENT: "There's precious little originality in *Snott*, but it's enjoyable to play all the same. Definitely worth a look to while away a few long winter evenings."
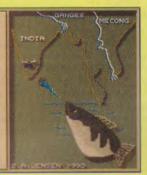✪✪✪✪

THE SPITTING FISH

FLOPPYSHOP • DISK NO: BUD.3831 • £2.95 • MEMORY: 0.5MB • LICENCEWARE

IN BRIEF: In the heart of India there lives a small fish called Toxates Jaculator which catches insects by spitting on them. This beautifully presented educational title from Budgie places you in the role of this scaly marksman, the idea being to feed a small school of youngsters. How could you resist a challenge like that? The game is split into a number of timed rounds and is very simple to play – just line up the cross-hair with one of the two butterflies flying around above the surface of the water and spit! If the shot is successful, the youngsters will surface to enjoy the feast and it's back to square one.

Each session is punctuated with a simple maths exam which must be completed before progressing to the next round. Bonuses are awarded for a hit rate of 90% or more and some crisp samples are used to polish up the presentation.

ST REVIEW COMMENT: "*Spitting Fish* is skilfully sewn together and a very good educational title. The gameplay itself is perhaps a bit limited, but it's definitely worth the £3 asking price."
☻☻☻

Oh no, surely not another Toxates Jaculator simulator. I promise I'll never complain about unoriginal software ever again!

The mix of arcade action and puzzles makes The Spitting Fish a very effective educational title.

OOPS!

LAPD • DISK NO: G.319 • £1.50 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: If you have a soft spot for puzzle games *Oops!* will be right up your street. It runs along similar lines to the Krypton Factor's manual dexterity test and presents the player with a small selection of tiles from which a larger shape must be built. Just switch the pieces around until they fit into place.

There are dozens of different shapes to choose from and the mouse is used to control the movement of pieces. The only problem is that *Oops!* isn't capable of telling you whether the problem is actually solved correctly. Instead, when you think the shape is correctly formed the game will display the solution and it's up to you to make the final decision. To complicate matters, a strict time limit is thrown in and three skill levels ranging from easy (read tough) to hard (read virtually impossible!).
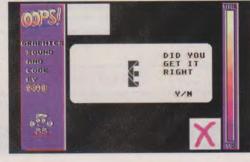
ST REVIEW COMMENT: "Prepare for hours of enjoyable frustration with *Oops!* – it's a brain-teaser in the true sense of the word. The game doesn't come across quite as well on screen as it does in perspex, but it's very entertaining all the same."
☻☻☻☻

Hmm, takes you right back to school doesn't it? As easy as it may look, Oops! is probably the most challenging game in this month's selection.

Unfortunately the game isn't capable of telling you when the puzzle is correct and instead you must pass judgement on yourself. How convenient!

Reflex's presentation is very special, although a 15 minute limitation on the shareware version is a bit stingy.

REFLEX

ATARI ST BUDGET BUY

NEW AGE PDL • DISK NO: GAME.137 • £1.50 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: *Reflex* is a puzzler that takes the best aspects of *Columns* and *Tetris* and squashes them into a highly original game. The idea is to form rectangles of coloured blocks by interlocking shapes that appear on screen. The pieces are freely movable around the play area with the mouse and the number of colours increases as the game progresses. Extra points are granted for trapping blocks within differently coloured rectangles. Making sense? I hope so...

In general the graphics are very polished, but one small problem is the similarity in colour between the red and pink blocks. Part of this can probably be attributed to my senile Thomson monitor, but I can't imagine the situation being any better on a TV. The shareware game allows you fifteen minutes' playtime before curling up its toes and dying. If you want more, you'll have to think seriously about sending off the five quid registration; very good value for a game of this calibre.

ST REVIEW COMMENT: "If you're into *Tetris*-style games, *Reflex* is more than good – it's divine! Playable, highly addictive and the presentation is out of this world – what more could you ask for?"
☻☻☻☻

The gameplay is every bit as addictive as Tetris, while offering a totally new challenge.

Iain Laskey reviews another three books that can help you get the most from your ST.

C TRAPS AND PITFALLS

All languages have their fair share of "gotchas" and C possibly more than most. This book is a guide to the more common ones and how to avoid them.

It is not for beginners however and by page 13 we are looking at code fragments like (*(void(*)())0)(). These expressions strike terror into the hearts of C programmers but the book shows how to break down such expressions to find their meaning. The importance of operator precedence is stressed as different examples are examined.

A whole gamut of syntactic and semantic errors are examined with lucid explanations of the working of C and how to overcome the problems. As would be expected, pointers get a thorough going over as well as assorted bounding issues with notes on buffer overflow and defensive programming to prevent this.
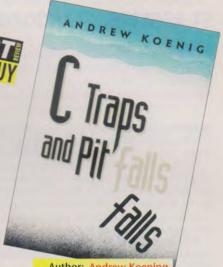
The linker comes next with tips on using header files to best effect. Additionally, correct declarations and the use of externs is discussed.

Library functions are covered briefly with notes on possible file handling problems before moving onto the preprocessor. Here, particular attention is paid to macros and how to use them to best advantage.
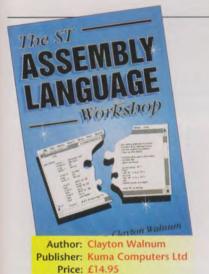
Final chapters cover portability and general debugging strategies. Three appendices tie up the loose ends and a thorough index finishes things off.

Despite its low page count, this book manages to pack in a lot of useful information. Everything is clearly explained with good code examples and a few intelligently chosen exercises.

To anyone who is remotely serious about their C, this book is a must. Highly recommended.

ATARI ST ESSENTIAL BUY

ANDREW KOENIG

C Traps and Pitfalls

Author: Andrew Koening
Publisher: Addison Wesley
Tel: 0734 794000
Price: £16.95
Rating: ⚫⚫⚫⚫⚫

THE ST ASSEMBLY LANGUAGE WORKSHOP VOLUME 1

Following on from Clayton Walnum's *C-Manship Complete* comes volume 1 of his guide to assembly on the ST. This first volume covers the basics with later planned volumes covering GEM and then advanced GEM.

The book assumes no assembly knowledge whatsoever and starts with an overview of stacks, program counters and status flags. After a quick look at subroutines and addressing modes it starts to deal with ST specific areas with some calls to the OS and the first proper program listing. Different ways of handling numbers are examined along with several useful conversion subroutines. Rather strangely, the next section is the system clock but this is mainly used as a way of introducing bits and some ways of manipulating them. Several new system calls are examined as the book delves into files and how to manipulate them. Finally the screen is looked at albeit briefly with a routine for loading standard Degas files and displaying them.

Several Appendices cover how to assemble code and the various 68000 instructions. The latter is rather brief and most explanations are terse leaving the reader wondering what to do with them all.

All the listings are in *Devpac* format and are well commented if a little uninspired in their functionality

Overall the book is adequate and while it covers most areas needed to get up and running, its explanations rarely go deeply enough for anyone who already has more than a nodding acquaintance with assembly.

The ST ASSEMBLY LANGUAGE Workshop

Author: Clayton Walnum
Publisher: Kuma Computers Ltd
Price: £14.95
Rating: ⚫⚫⚫

THE ATARI ST EXPLORED
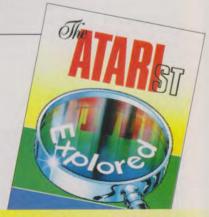
This is the second edition of a book that is almost as old as the ST itself! Starting with a guide to the basic use of GEM and the desktop, it covers all the functionality in a businesslike way. The various elements of the ST's operating system are dealt with in turn before getting into a brief history of user interfaces and a discussion on WIMP etiquette.

Programming is introduced by looking at what a program is expected to do in the GEM environment and how to design your interface. C, Assembler and ST BASIC are examined briefly with short examples of programming the VDI. There are screen shots to help you confirm your programming is doing what is expected. The BIOS and XBIOS are next explained along with each function being detailed in both C and Assembler. GEMDOS gets similar treatment along with notes on GEMDOS versus BIOS/XBIOS The book's age shows here however and some of the recent additions to TOS are missing.

The book finishes off with a look at a mixture of topics including the keyboard interface, Line A and communications. This whole section is rather dated and refers to RAM-based TOS and 300 baud acoustic couplers! Nostalgia fans will be interested in this section! The keyboard scan and VT52 codes make up the appendices.

For the money, this is a good introduction and covers a lot of ground in an easy reading manner. It won't appeal to the intermediate to advanced user though unless you are interested in a lot of background information.

The ATARI ST Explored

Author: John Braga/Malcolm McMahon
Publisher: Kuma Computers Ltd
Price: £9.95
Rating: ⚫⚫⚫⚫

PD ZONE

ST ASSEMBLY LANGUAGE – BOOK 2

GOODMAN INTERNATIONAL • DISK NO: GD.2111 • £1.95 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: The ST has amassed quite a collection of programming books, covering everything from C to *Metacomco BASIC*. This shareware offering aims to explain GEM programming from assembly language.

The book is split into five chapters and assumes that you have mastered the basics of assembly language. It starts by looking at initialising the AES and the first demo simply displays an alert box on screen. From there it progresses to displaying a file selector, installing a GEM menu bar and finally in chapter five, using the VDI. Full source code is included with each demo program and is fully compatible with both *Devpac 2* and Atari's own *MadMac*.

The fact that all of the demo programs run on the Falcon in any resolution suggests that the principles taught are fairly clean and will stand you in good stead for the future.

ST REVIEW COMMENT: "This is a good starting point for using GEM from assembly language. It's well written and very informative, although some proper formatting on the text would be nice."
◉◉◉◉

All of the example programs are Falcon-friendly and run under MultiTOS, which in itself speaks well of the lessons taught.

WELLER TOOLS FOR GFA

GOODMAN INTERNATIONAL • DISK NO: GD.2003 • £1.95 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

IN BRIEF: Bugs are the bane of a programmer's life; one mistyped variable name and a whole project can come crumbling down in a shower of bombs. *Weller Tools* can help you to track down these minor *faux pas*.

The program contains two main tools – an outliner and a cross-referencer. The first of these helps you to trace a program more efficiently, by only listing lines containing certain key words. The cross referencer on the other hand is a much more useful idea altogether. It reads through source code counting the number of times each variable is used and displays the results on screen together with a whole sackful of other information. It even suggests ways of making your program more efficient and readable – by replacing a global variable with a local alternative for example. Unfortunately the program is only capable of dealing with ASCII source code, but works well with versions 2 and 3 of *GFA BASIC*.

ST REVIEW COMMENT: "*Weller Tools* is quite an original idea, but I'm not sure how many programmers will find it genuinely useful. The X-Reference option is superb for tracing bugs, and it's worth getting hold of the package for this feature alone."
◉◉◉◉

X-Ref is invaluable for digging out misspelled variable names and non-essential global variables.

SPRITE WORKS

ATARI ST REVIEW BUDGET BUY

TUMBLEVANE PDL • DISK NO: OCL.03 (2 DISKS) • £7.00 ALL IN • MEMORY: 0.5MB • LICENCEWARE • FALCON-COMPATIBLE

IN BRIEF: Shareware productions like *Reflex*, *H-Mec* and *Guerroyer* prove that *GFA BASIC* is every bit as competent as *STOS* in the games making department. The only trouble is the lack of programmer-friendly commands to handle the maps, picture packing and snazzy fonts required by all modern games.

Sprite Works fixes that problem by adding a clutch of helpful routines to *GFA BASIC*. There are new commands specifically to handle sprites, scroll the screen, include sampled sound and all are written in 100% assembly language to maintain maximum speed and efficiency.

Documentation is plentiful and several demos are included to show you exactly what the software is capable of. There's a racing game that illustrates fast vertical scrolling and two platformers that show off collision detection (as well as the author's artistic talents). All are quite basic and fall short of complete games, but nicely demonstrate the use of the extension in a "real" setting.

When it comes to actually using the new routines, any reasonably experienced GFA user shouldn't have any

Several games including the excellent Slug are provided to show the power of the fast routines.

problems at all. They can either be held "inline" or stirred into action as and when you need them with the *Bload* command and both methods are fully explained. Version 3 of *GFA BASIC* is required to make any use of the extension and you'll also need a copy of the compiler, obviously. Most parts of the package work on the Falcon, although sampled sound can mess things up badly so it's helpful to have *Backward II* installed when running the demos.

You can use any sample source code in your own games, but the graphics can't be distributed – a shame!

A number of complimentary utilities back up the routines themselves. A map designer is included to take the pain out of producing multiple screen games and it's just a case of loading up the graphics and plotting which bits go where. You even get a full featured art package for your money and a complete assembly source code for all of the routines is also provided for the adventurous.

ST REVIEW COMMENT: "You will not believe the quality of the games that can be produced with *Sprite Works* – the platform game demo runs every bit as smoothly as *Magic Pockets*! It's probably a bit advanced for the casual programmer, but is ideal for the seasoned GFA fan in search of a bit more power."
◉◉◉◉◉

Individual commands are well documented through fragments of GFA source code.

WEGA C DEVELOPMENT KIT

CALEDONIA PDL • DISK NO: LAN.33 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE • HARD DISK REQUIRED

IN BRIEF: An application is only ever as good as its GEM bindings – or the calls that allow a program to set up its interface. The *Wega C Development Kit* is a set of GEM bindings that go a good deal further than most available for the ST. It offers non-modal (windowed) dialogue boxes, proper round radio buttons, superb form handling and much more.

The whole thing is supplied as a set of self-extracting archives and it's just a case of copying the lot to your hard disk – avoid the installation program if you can because it crashes. Don't get your hopes too high though; there are two major problems with *Wega*. The first is that it's designed to work exclusively with *Pure C* (still not available in the UK) and secondly the whole thing is in German!

Windowed dialogue boxes and proper radio buttons – Wega is a GEM programmer's dream, but only with Pure C...

ST REVIEW COMMENT: "If a version of *Wega* was available for *Lattice C* with English instructions we would be looking at a rave product. As it stands, it's still the best set of GEM bindings available for the ST, but sadly not an awful lot of good to UK programmers."
●●●

Full instructions are provided, but German To English will work overtime to translate this lot!

THE MISSING LINK
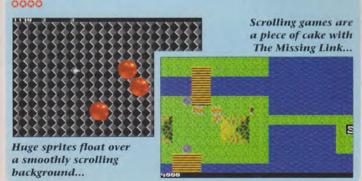
FLOPPYSHOP • DISK NO: GAM.3876C • £2.50 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: The *Misty* extension changed the *STOS* world as we know it. Dozens of classy games have emerged from its hallowed stables including the RPG classic *Bio Hazard*. *The Missing Link* is a follow up to *Misty*, programmed by the same authors and designed to complement the original.

It features replacements for lots of slow *STOS* commands, flexible map designing abilities and several other new tricks of its own. All of the commands are well documented and very easy to use if you are used to working with *STOS*.

In addition to the extension itself, you'll also find plenty of ready-to-run examples on the disk. There's a good variety of game styles illustrated, but you'll need to register to get hold of the source code.

ST REVIEW COMMENT: "If you're a fan of *Misty*, *The Missing Link* is an essential purchase. With a bit of know-how it's capable of adding a professional touch to almost any *STOS* game and at only £10 for the full product, it's a steal!"
●●●●

Scrolling games are a piece of cake with The Missing Link...

Huge sprites float over a smoothly scrolling background...

TOP TEN PROGRAMMING UTILITIES

1 SPRITE WORKS • TUMBLEVANE PDL • DISK NO: OCL.03 (2 DISKS) • £7.00 ALL IN • MEMORY: 0.5MB • LICENCEWARE • FALCON-COMPATIBLE
Sprite Works is one of the best things that's happened to *GFA BASIC* in a long time. It adds a range of fast commands to the language which can be used to create commercial quality games in no time. The cream on the cake is a collection of superbly written demo games and genuinely useful documentation.

2 PROFILE • GOODMAN INTERNATIONAL • DISK NO: GD.2120 • £1.95 • MEMORY: 0.5MB • FREEWARE • FALCON-COMPATIBLE
Profile is the program for anyone who's interested in finding out what makes their ST tick. It covers everything from connected disk drives to the screen address and should be a part of every programmer's utility collection.

3 THE MISSING LINK • FLOPPYSHOP • DISK NO: GAM.3876C • £2.50 • MEMORY: 0.5MB • SHAREWARE
A competent follow-up to the hugely successful *Misty* extension. There are commands to manage *Gauntlet*-style game maps and the routines are light years ahead of *STOS* in terms of speed. The new commands might be a bit primitive for beginners, but for experienced users this is an essential purchase.

4 STOS STARTER PACKS • DISK NO: BY NAME (2 DISKS) • £3.90 • MEMORY: 0.5MB • SHAREWARE
Getting a kick-off into the world of games programming can be a tricky task, but this collection of ready-written games will help no end. They illustrate quite a number of basic principles and were written by the author of *STOS Paint 2*, Ralph Effemey.

5 ST ASSEMBLY LANGUAGE • BOOK 2 • GOODMAN INTERNATIONAL • DISK NO: GD.2111 • £1.95 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE
Programming GEM from assembly language is no easy task, but this book is probably the best way to learn. Each chapter comes with a ready-to-run example program and the source code can be used with both *Devpac* and Atari's own assembler.

6 GFA BASIC 2 • GOODMAN INTERNATIONAL • DISK NO: GD.500 • £1.95 • MEMORY: 0.5MB • EXCLUSIVEWARE
If you are looking to start programming on the cheap, *GFA BASIC 2* is the language to go for. It's structured, fast and many public domain programs have been written with its help. It may not be the most recent implementation, but it's still one of the classiest versions of BASIC available.

7 GFA WIPES & FADES • GOODMAN INTERNATIONAL • DISK NO: START 3/90 • £1.95 • MEMORY: 0.5MB • EXCLUSIVEWARE • FALCON-COMPATIBLE
This collection of routines allows stylish fades to be performed from *GFA BASIC*. The screen can be unrolled, gently faded or quickly wiped and all of the effects are very easy to call from your own programs.

8 STOSSER • GOODMAN INTERNATIONAL • DISK NO: BY NAME • £1.95 • MEMORY: 0.5MB • PUBLIC DOMAIN
STOSSER is fast becoming an essential purchase for any *STOS* user. Not only does it contain some helpful programming articles, but it also contains details on most of the new *STOS* products to hit the market.

9 GFA UTILITIES AND SOURCES • THE ST CLUB • DISK NO: LAN.144 • £1.45 • MEMORY: 0.5MB • PUBLIC DOMAIN
A huge collection of *GFA BASIC* programs and source code can be found packed onto this disk. There's a Mandelbrot generator, Degas loading routines and much, much more. Although most of the programs will run under *GFA 3*, the source is in version 2's BAS format and will require conversion.

10 COOKIE CPX • FLOPPYSHOP • DISK NO: UTL.3879 • £2.50 • MEMORY: 0.5MB • PUBLIC DOMAIN
A useful CPX module by the author of *GEMView* that displays the "cookie jar" in an easily understandable form. Once again it's not something that will be useful to the casual user, but is a handy debugging tool for programmers.
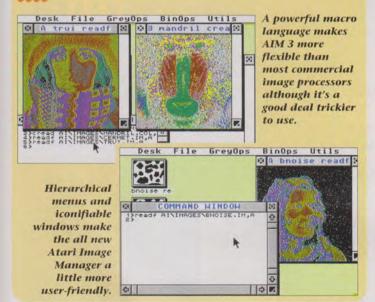
PD ZONE

ATARI IMAGE MANAGER 3

TUMBLEVANE PDL • DISK NO: AAG.49 (2 DISKS) • £3.00 • MEMORY: 1MB • PUBLIC DOMAIN

IN BRIEF: Image processing is usually an expensive business, but one beacon of light shines out from the public domain world – the *Atari Image Manager*, newly promoted to version 3.

This clever package allows you to take a scanned or digitised picture and apply a myriad of powerful filters and effects to it. It will work with several image formats including IFF, NeoChrome and Degas. The catch is a rather complicated attitude to life – instead of providing some simple effects, such as "blur" or "sharpen", all are firmly on the techie side. Mind you, the interface has become a lot more logical in recent times, the hierarchical menu system alone making things much easier to keep under control. Although superficially compatible with the Falcon, *AIM 3* is very temperamental as far as colour is concerned and the menus misbehave badly.

ST REVIEW COMMENT: "If you know what you're doing, *Atari Image Manager* is a truly amazing package and the macro language makes it more flexible than many commercial packages."
✪✪✪✪

A powerful macro language makes AIM 3 more flexible than most commercial image processors although it's a good deal trickier to use.

Hierarchical menus and iconifiable windows make the all new Atari Image Manager a little more user-friendly.

MANDEL

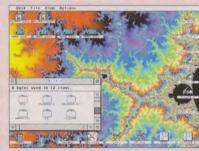### GOODMAN INTERNATIONAL • DISK NO: GD.2122 • £1.95 • MEMORY: 0.5MB • FREEWARE • FALCON ENHANCED

IN BRIEF: Some people call them mathematical miracles, others pretty patterns, but one thing is for sure – fractal generations are one of the most beautiful things a computer is capable of creating. *Mandel* is the latest in a long line of fractal generators to appear on the ST and supports all varieties of Atari hardware, running in everything from mono to Falcon true colour.

By default the program runs full screen, but a prod of the space bar will summon a standard GEM interface that can be used to customise the results. Digging deeper into generations is just a case of dragging a box around the area to view. The program fully supports a DSP or maths coprocessor if you have one, which means that the generation speeds can be very good on the right machine. You will need to rename the *MAND_ENG.RSC* file to *MAND_INT.RSC* to gain English prompts.

ST REVIEW COMMENT: "If you've got an ST, *Mandel* is nothing more than a passing interest, but on a Falcon in true colour – Wow! The generations it produces really are postcard material and make exceptional desktop backgrounds."
✪✪✪✪

Mandel will use any hardware you happen to have bolted onto your machine including a coprocessor or DSP.

The finished generations make fantastic desktop backgrounds as this 256 colour piccy clearly shows.

STOS PAINT 2

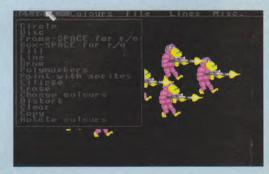### LAPD • DISK NO: L.62 • £2.50 • MEMORY: 0.5MB • LICENCEWARE

IN BRIEF: How many times have you merrily been programming away in *STOS* only to find that your main game backdrop requires some last minute adjustments? Well my friend, what you need is an art package that can be used without leaving the program and what do you know – *STOS Paint 2* will do nicely.

STOS Paint 2 runs as an accessory alongside the language, memory permitting.

It's supplied as an ACB program and can be loaded into any one of the *STOS* accessory slots. The drawing tools themselves are quite basic, but adequate for most small adjustments. In addition to the standard lines, circles and boxes there's a nice option to paint with sprites that can be loaded from disk in the standard format. The program occupies around 100Kb of memory, so it will run on a half meg machine, but it's a lot more comfortable with a full meg.

ST REVIEW COMMENT: "*STOS Paint 2* doesn't stand up very well against the likes of *Crack Art*, but the fact that it can be run from within *STOS* is a big bonus. If you've got a 1Mb machine it comes recommended."
✪✪✪✪

The program is no match for a dedicated art package, but it's ideal for last minute adjustments.

PD ZONE

LET 'EM FLY

FLOPPYSHOP • DISK NO: UTL.4140 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: *Let 'em Fly* intercepts the ST's dialogue handler and replaces it with a powerful alternative. As the title suggests, the main effect is movement; by clicking and holding the mouse over a dialogue box, it can be uprooted from the screen and freely dragged around.

What's more, the benefits don't end at simple alert boxes. More complex "forms" also become much more user-friendly. Editable text can be copied to the GEM clipboard, and special characters entered with a single mouse click.

Let 'em Fly adds keyboard short-cuts to most GEM dialogue boxes – even with MultiTOS!

Even more classy are the keyboard shortcuts which are automatically added to most boxes and a CPX module is used to enable, disable and adjust all of these features.

Unfortunately, a large proportion of ST business software side-steps the standard FORM_DO routine and so aren't greatly enhanced by *Let 'em Fly*.

ST REVIEW COMMENT: "*Let 'em Fly* is much faster than *Multi-Dialogue* and contains some inspirational ideas. It's just a shame that more software doesn't adhere strictly to the rules."
✪✪✪✪

Exotic characters can be accessed by pressing <Shift> and <Insert> in a text field.

GERMAN TO ENGLISH 3

FLOPPYSHOP • DISK NO: UTL.3766 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: It's no secret that the majority of quality ST packages come from Germany, and that includes public domain and shareware. *German To English* is a utility designed to help out with the tricky process of translating instruction files by taking any German text and attempting to turn it into coherent English. True, many other programs claim to do a similar job but the

A graphical display shows how much of the text remains to be translated and also gives an indication of the success rate.

TERADESK 1.36

GOODMAN INTERNATIONAL • DISK NO: GD.2120 • £1.95 • MEMORY: 0.5MB • FREEWARE • FALCON-COMPATIBLE

IN BRIEF: If you've ever had a chance to experiment with TOS 2.06, you'll realise just how limited Atari's original desktop really is. *Teradesk* is a firm PD favourite, being a compact and flexible replacement that occupies very little memory.

Numerous improvements have been added to this latest release, perhaps the best of which is a greater degree of configurability. Windows and desktop patterns can be adjusted with ease and you needn't worry about any badly behaved programs stealing your trendy colour schemes,

Adjustable memory reserved for a buffer makes for nippy copy operations on a 4Mb machine.

because *Teradesk* will install the default set-up as it is brought back into play.

The program also seems to be a good deal faster than most other replacement desktops, which is good news for standard ST owners. It runs beautifully as a task under *MultiTOS* and can also be used as the default shell to save memory.

ST REVIEW COMMENT: "*Teradesk* runs happily on a 520ST machine in all resolutions and provides a slightly higher level of sophistication than Atari's *Newdesk*. A great upgrade for ST owners."
✪✪✪✪

A MultiTOS-style text viewer is built-in, as are a number of original desktop icons.

thing that makes this one special is a truly gigantic dictionary, containing over 26,000 words.

The whole kaboodle is fully GEM driven and it's just a case of choosing a text file and watching the progress box. When the process is complete, the English text is displayed in a window with any untranslated words highlighted in red. One or two crashes were experienced when running on the Falcon, but it only seems to occur when more than one file is translated per session.

ST REVIEW COMMENT: "There are plenty of translation programs on the market, but unlike most *German To English* is a complete solution. You get a whole disk full of dictionary which includes a large amount of computing jargon."
✪✪✪✪

Untranslated words are displayed in red and can be added to the dictionary with a simple click of the mouse.

ASTUBANK

TUMBLEVANE PDL • DISK NO: UTA.057 • £1.50
• MEMORY: 0.5MB • SHAREWARE

IN BRIEF: Are you the sort of person who never knows how much money you've got in your bank account until the statement arrives at the end of the month? Then perhaps it's time to take the risk factor out of using your cheque book by installing *Astubank*.

A *STOS* (read slightly tacky) menu screen fronts things up and from here you have the option to allocate money, print statements, analyse a bank account and so on. Full on-line instructions are included and once you've discovered that <e> bails you out of any dialogue box, it's quite easy to use. The program is quite heavily keyboard based, but if you'd rather stick to the mouse characters can be clicked by pressing the right button.

Be careful when you install *Astubank*. The program only runs from a write enabled disk and starts by asking for a blank floppy, which it then formats. It's the easiest thing in the world to hit <space> and wipe the program disk...

ST REVIEW COMMENT: "There are better general purpose accounts programs available in the public domain, but for simple money management *Astubank* is well worth a look. Ignore the lacklustre interface and it's a very capable program."

😊😊😊

A simple interface fronts up the program and figures can be entered via the mouse if need be.

Astubank is not the most powerful accounts package available, but it's ideal for simple money management.

QUICKBBS – ST

FLOPPYSHOP • DISK NO: COM.3895 • £2.50 • MEMORY: 1MB • SHAREWARE • HARD DISK RECOMMENDED

IN BRIEF: Don't worry – *QuickBBS* is not "yet another comms program" but in fact a piece of software that allows you to set up a BBS on your ST. All you need is a modem, a gargantuan hard disk and plenty of patience.

In terms of power, *Quick* is a heavyweight; it features unlimited file areas, powerful message handling and full Fidonet compatibility amongst many other things. The main problem with this type of software is usually getting the thing up and running, but even this aspect shouldn't cause too many problems, thanks to the installation program and acres of superbly written documentation. In order to put your BBS on-line however you will need a "key" from the authors – a 60-day taster is free, while an unlimited version costs around £50.

ST REVIEW COMMENT: "Setting up a bulletin board is never an easy task, but *QuickBBS* is probably the best software to do it with. The documentation is truly excellent and you should be up and running in days rather than weeks."

😊😊😊😊😊

Maintaining the board is relatively straightforward and the stout manual is always on hand to help out if you get stuck.

£1.50 EACH
Unless otherwise stated

New Age PDL

UTILITIES (ANY RES)

UTIL 2 - Startgem, Head Start 1.1, DC Clock, Disk Checker, Hard Disk Utils, Ram Disks, Hack 'n' Copy, Turtle 3.0 (HD backup), Megaformat, Memory Test.
UTIL 3 - ST Almanac, Class 3.0 - combination spreadsheet/database for teachers, Treesaver - prints several pages on one to save space - good for long docs.
UTIL 4 - Pools 2.5, ST init 3.4, Switcher - loads programs faster, 20 DC utilities.
UTIL 5 - F-Copy 3, DC Showit, Desk Manager, Disk Scan, Mono Emulator 5, Spool, DC Stuffer (loads 32 accs), Speech Synthesiser, Mouse Accelerator.
UTIL 6 - James The Butler, London Phone Codes, MenuSYS, Pinhead, Super Calendar Batch Startup, Auto Sort, Postmortem, No Bombs, E-Disk, 9 Quick Utilities.
UTIL 12 - Jam Packer 4, Wind-XES (Modulator control panel), Satellite 4.01, Clock Set.
UTIL 13 - German to English translator, fast Print, DC Salvage, MiNT, Maccel 3.0.
UTIL 14 - Printer Drivers inc Canon Bubblejet, Qume Daisywheel, Brother + Epson.
UTIL 15 - Calculator, D-Copy 3.08, Directory Printers, Guardian Virus Detector, Label Maker, Recover, Sector Editor, Virus Die, CLI, Diary, Reboot, Mousetrap.
UTIL 16 - Chameleon - loads and unloads accessories without having to reboot, Sticker 3.0 (mono only), Definitive File Selector, Super Virus Killer, Benchmark.
UTIL 19 - Your Second Manual, Jokes, GDOS info, Bombs info + several magazines.
UTIL 30 - Superboot 8.1, Build Your Own Scanner, Report Writer, Disk Cleaner.
UTIL 35 - Cheetah 1.1 (high speed copying util), Rainbow TOS patches, Unarj 2.2.
UTIL 38 - Printer Drivers inc: KXP 1124, Star LC24, NEC Pinwriter, Brother, Canon, Cihzen, HP Deskjet, Oki, Qume, Taxan, Toshiba, Riteman, Atari.
UTIL 40 - Loads of packers inc: Atomik 3.5, Automation 5, Dragon 3, Fire 2, Ice 2.4, Pompey 1.9, Speed Packer 2, Branch Always Packer. + Multi Depacker 1.5
UTIL 42 - Intro Maker - mix pictures, sprites, scrolls and music together. Colour only.
UTIL 45 - Kaos Desk 2.01, Terra Desktop 1.36 - replacement desktops.
UTIL 46 - STOS Shoot em up builder kit 0.6 - colour only.
UTIL 51 - Form Finder 2.2 - horse racing predictor which is easy to use. Colour only.
UTIL 53 - TOS Version 1.0 - allows you to run programs that don't run on your TOS.
UTIL 54 - Message Scroller, Archiver Shells, Envelope Printer Demo, Mega Cracker.
UTIL 55 - Spectrum Emulator 1.2 - run Speccy games - includes Hobbit, Manic Miner
UTIL 57 - Revenge Doc Displayer 3.0, Wordfinder 3.0, Desktop.inf configurator.
UTIL 58 - Career Themes Inventory and Personality Tester - great fun!
UTIL 59 - Neodesk patches - 3.01 to 3.02 and 3.02 to 3.03.
UTIL 60 - JC Label 1.3, Jon-Dos 1.7, Flowchart Compiler, Boot Time 2.0, Multisync.
UTIL 61 - Rename It, Zoo Archiver 2.1, Insert Date, Marrow, Shadow Ramdisk.
UTIL 62 - BJ Chrome 1.1, Desk Master, Crocery Lister, Silk Mouse, Auto Load, Blitz.
UTIL 63 - JC Calendar 0.3 - an extremely pleasant and flexible calendar maker.

BUSINESS (ANY RES)

BUSI 1 - Invoice And Statement Generator demo, Sales Controller - High Res only.
BUSI 2 - Sheet 2.0, Dbase One, First Base 1.6, Home Budget Template.
BUSI 4 - Opus 2.1 brilliant spreadsheet. 1 Meg+.
BUSI 5 - WG Data, ST Sheet, Visi Clone - three more spreadsheets.
BUSI 6 - Double Sentry Book Keeping System, Address Book.
BUSI 7 - Astubank 1.1 at - complete home accounts system - colour only.
BUSI 8 - G-Base - a graphical database designed for importing graphics. Colour only.
BUSI11 - Compact Office Management Program 2.05 - for any small business, loads of features.

MUSIC & MIDI

MUSIC 1 - Noisetracker 1.5 - a popular soundtracker creator with samples & source.
MUSIC 2 - Samples disk 1. works with most soundtracker creators.
MUSIC 7 - Hacker voice sets and songs for use with Quartet.
MUSIC 9 - Midi Magnet, Chord Master, Keys KMP, TX81z, Satellite (High Res only).
MUSIC 11 - Arpeggiator, Zeppelin, MIDI Beat, Project, Jukebox, MKS-50 - any res.
MUSIC 12 - Henry Cosh Sequencer, Composer - any resolution.
MUSIC 13 - Drum Patterns for Cu-Base in standard MIDI format - any resolution.
MUSIC 16 - Yamaha PSS790 Editor, includes loads of sample voices.
MUSIC 22 - Alchemie Junior 2.2 - sequencer with real-time, multitasking etc. High res.
MUSIC 23 - Sound Merlin - good ex-commercial program, Mozarts Dice Waltz - compose music without musical knowledge. High res only.
MUSIC 24 - Octalyser 8-track Sampler - STE only, Protracker 2.1, YM Tracker.
MUSIC 25 - DR T's Omega II demo of their amazing new sequencer. 1 Meg+.
MUSIC 26 - PSS Utilities disk, loads of programs including patch editor, librarian etc.
MUSIC 27 - Casio CZ synths, 32-track sequencer, Kawai K1 editor, MIDI menu.
MUSIC 28 - Editor and Librarian for Yamaha TX1Z, MIDI rat, Switcher, High res only.
MUSIC 29 - Kawai K1 synth sounds.

EDUCATION

EDUC 1 - Kid Music, Kid Notes, Kid Piano, Kid Puzzle, Kid Graph, Rebus Writer.
EDUC 2 - Kid Grid 2, Kid Mixup, Kid Publisher, Kid Sketch, Kid Story, Kid ABC.
EDUC 6 - Maths Made Easy, Kid Shapes, Kid Shapes Plus, Race Cards.
EDUC 7 - Michaels Big Adventure - colourful graphics, easy to play. Age 8+.
EDUC 9 - Bodyshop, Computer School 2 & 3, Butterfly in the Park.
EDUC 12 - English Conjugation System, Pure Logic, Phonics, Key Capers.
EDUC 16 - Franglais 1 & 2 - French Tutors, Me First 2.0, Numbers, Slimming.
EDUC 18 - Spanish Verb Tutor, World at Risk, About the House, Perfect Match.
EDUC 19 - Computer School 4 - tests reflexes, memory, logic, coordination etc.
EDUC 20 - Easter Egg Hunt - pleasant adventure for 7-12 yrs without violence etc.
EDUC 21 - G.C.S.E. Higher Maths Grade Tutor, Franglais 3 - French Tutor.
EDUC 22 - G.C.S.E. Chemistry Tutor - all you need to attain grade 'C' or above.

C.I.A. WORLD FACTBOOK

Four disks crammed with information about the world, covering 247 nations and their populations. An absolute mountain of knowledge useful for research. Also covers weights and measures and contains a complete Chemistry Reference Book. Amazing!! EDUC 23-26.

£5.00

EDUC 27 - Mastertime - brilliant time tutor, Simple Cinema, Weather Time, Human.
EDUC 31 - 1900's USSR - a very good interactive learning system.
EDUC 33 - Sample Time, Picture Time, Add Up - great learning programs just for kids.
EDUC 35 - Math Circus, Ellie Mouse Colouring, Piggy Bank, Seaside - more kids programs.
EDUC 36 - Benjamin's ABC - teaches the alphabet using speech and pictures.
EDUC 37 - From Picts to Parliament - a textual and graphical look at British history.

SHOESTRING EDUCATION

SHOE 1 - Robot Attack - tests children on their times tables. £2.95.
SHOE 2 - Moon Letters - a nice spelling type game. £2.95.
SHOE 3 - Picture Mix - Age 6+ the aim is to recreate a mixed-up picture. £2.95.
SHOE 4 - Robot Words - a friendly hangman type game for kids. £2.95.
SHOE 5 - Alphabet Mix - like SHOE 3 but with words instead. £2.95.
SHOE 6 - All Blocked Up - A really good maths/shoot em up game. £2.95.
SHOE 7 - Word Race - win races by spelling words correctly. £2.95.
SHOE 9 - Maths Fun 1 - a nice maths game for children. £2.95.
SHOE 10 - Mini Boggle - a good version of the classic game of boggle. £2.95.

PROGRAMMING

LANG 1/2 - Sozobon C Compiler release 2. Includes documentation, shell etc. £3.
LANG 3 - C Source code, loads of routines including documentation.

GNU C++ COMPILER 2.1

This five disk set is archived and will need to be unarchived to a hard drive before use. It also requires at least 2.5 meg of memory. This is intended as a developers version - ie not for novices. LANG 5-9.

£6.50

LANG 11 - GFA Basic programs, includes runner program. ST Basic 1 programs.
LANG 13 - Professional GEM guide - 17 chapters of tutorial with C source.
LANG 16 - STOS Tutorial and various Basic programs.
LANG 24 - C Adventure Toolkit - the very best adventure creator available.
LANG 27 - GFA Basic v 2.0 - GFA Expert - a nice GFA Basic tutorial.
LANG 29 - STOS Tracker - adds a new set of STOS commands for Soundtracker.
LANG 33 - Coronado Enterprises C++ Tutorial 2.0 - 12 chapters + source.
LANG 34 - Pascal Compiler, includes linker, library files, shell + programs.
LANG 35 - Ultimate GFA Database 1.7 - loads of references to GFA articles.
LANG 36 - STOS Extensions: Missing Link, Misty, Blitter, MIDI, STE, + 7 more!
LANG 37 - STOS Software pack 1 - millions (almost!) of routines etc.
LANG 38 - Robert Annets Source Code disk - from the author of Shockwave.
LANG 39 - The complete STOS source code to Pandora's Box.
STOS 9 - The latest issue of STOSSER disk magazine, tutorials, articles, reviews.
BUPRO 2 - 68000 Programmers Library - hundreds of routs for games. £2.95.
BUPRO 4 - Moving Bytes 1 - more routines for screen effects, music, scrolls. £2.95.
BUPRO 16 - ST-68K Reference 3 - includes full data on ST internals, excellent. £2.95.

BEGINNERS GUIDE TO STOS BASIC

This is a complete programming course for all ST/STE's consisting of a 618 page, ring bound course manual plus two double sided disks with over 190 programming examples! 26 chapters will take you through step-by-step how to create shoot em up's, art programs, junior educational programs, GCSE maths programs, databases, word processors, music programs, and much, much more. Recommended retail price is £39.95 plus postage but we are doing it for an amazing £29.95 plus postage (£3.00 UK only). Read the box below for details of our unmissable EXCLUSIVE software mega-pack!

£29.95

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This is a collection of seven double sided disks selected from our library especially for their value to STOS programmers. We are offering this pack EXCLUSIVELY to customers of the Beginners Guide to STOS Basic (as above) at the amazing price of just £6.95! This pack consists of LANG 29, 3rd, & 37, GAME 19 & STOS 7, 8 & 9 which contain an upgrade to the latest version of STOS, tons of STOS extensions, mountains of source code including several complete games and the three latest issues of STOSSER magazine which are crammed to the brim with articles, hints & tips, tutorials, routines and many freebies. NOT TO BE MISSED!!

£6.95

This pack is only available to customers of the Beginners Guide to STOS Basic

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Eazy Text Professional Vector DTP (2 Meg+ & HD & Speedo GDOS)	£36.95
Introducing Atari ST Machine Code - book & disk, no knowledge req.	£17.95
IMPrint, for quality mono printouts on 9 or 24 pin printers	£9.95
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For full details on any of these products just give us a call!

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PD ZONE

MOVING PIXELS

GOODMAN INTERNATIONAL • DISK NO: GF.49 (5 DISKS) • £4.95 ALL IN • MEMORY: 1MB • PUBLIC DOMAIN • FALCON (VGA) ONLY • HARD DISK REQUIRED

IN BRIEF: You and I know what a great machine the Falcon is, but the chances are if you've seen one in a shop it's been running that highly original demo – the desktop. Hardly the sort of thing dreams are made of is it?

A group of Australian Atari enthusiasts thought exactly the same thing and have produced *Moving Pixels* to show what the Falcon is capable of in the graphics, business and sound departments. It's supplied spread over five high density disks and all are archived to save space – unpacked it takes a shade under ten megabytes of disk space!

The initial menu contains four pictorial options and clicking on one will display a slideshow with accompanying sound effects on that topic. The productivity button shows *Atari Works* and the desktop, while the music section gives a run through D2D and the specifications of the machine (in an Australian accent!) and so on.

ST REVIEW COMMENT: "*Moving Pixels* is a good demonstration of the abilities of the Falcon, but it's more suited to a shop window than a head to head with an Amiga owning friend. On the other hand, I did want to buy a Falcon all over again after watching this!"
✪✪✪✪

The three main areas of Falcon use are accessible from this main menu – just click the mouse and prepare to be impressed!

All of the dialogue you see on screen is spoken by the Falcon, hence the colossal disk space requirements.

Several example animations are included on the disk, although none go beyond 16 colours.

OVERLAY DEMO

FLOPPYSHOP • DISK NO: F.4257 • £3.00 • MEMORY: 1MB • BANNERWARE • FALCON ONLY

IN BRIEF: From day one Atari have promoted the Falcon as a multimedia machine and *Overlay* could be the application to fulfil the software side of the bargain. It's a package designed to play animations in a range of colourful screen modes with sampled sound to complete the illusion of reality.

A tiny control panel sits over an empty screen when you boot up and buried under the GEM style menus you will find a huge range of effects – text can be scrolled across the screen, pictures faded, logos rotated and, oooohh, lots of other exciting things.

Several demos are included to play with and although the prompts are in German the package is reasonably easy to grasp – besides, how many Falcon owners can afford not to speak German these days?

ST REVIEW COMMENT: "If you are interested in producing video presentations on the Falcon, the *Overlay* demo should be near the top of your shopping list. It could do with being just a bit smoother, but it's great fun to play with all the same."
✪✪✪✪
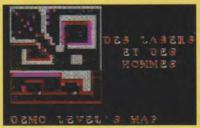
This small control panel heads up the whole program and contains numerous scrolling, fading and animation effects.

LASERS AND MEN PREVIEW

FLOPPYSHOP • DISK NO: BY NAME • £3.00 • MEMORY: 4MB • SHAREWARE • FALCON ONLY

IN BRIEF: Ask any PC owner to name their favourite shareware game and they will invariably come back with either *Wolfenstein* or its sequel *Spear of Destiny*.

The extra speed afforded by the Falcon means that "Wolfy" style texture mapping is now a possibility on Atari machines

Here's the task that stands before you: a huge dungeon to explore and a whole hoard of nasties intent on stopping you dead in your tracks.

and this game is the first to take advantage of that potential.

The plot remains identical to the original and the aim of the game is to wander round a spooky dungeon dispensing with any nasty characters who cross your path. Your hero is controlled with the mouse and the animation is wonderfully fluid throughout. Although this preview only contains one level, it's quite challenging and registering now will ensure that you get the full game as soon as it is released.

ST REVIEW COMMENT: "What can I say? *Wolfy* is on the Falcon, it's running in true colour and it's just as fast as the original. The finished product is going to be a real crowd puller, believe me."
✪✪✪✪
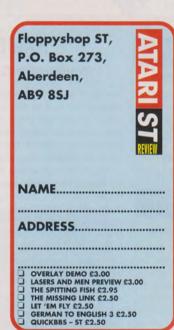
The pre-release version uses Wolfenstein graphics but the finished article should be totally original in all but gameplay.

CUT OUT 'N' SEND COUPONS

Impressed by any of the PD programs on offer this month? Go on – treat yourself by filling in the relevant coupon and using the great British invention of the stamp…

Floppyshop ST,
P.O. Box 273,
Aberdeen,
AB9 8SJ

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- ❑ OVERLAY DEMO £3.00
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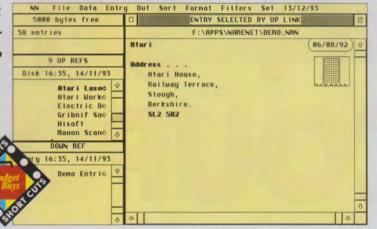
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- ❑ MANDEL £1.95
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L.A.P.D.,
P.O. Box 2,
Heanor,
Derbyshire,
DE75 7YP

ATARI ST REVIEW

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- ❑ IT'S A MUG'S GAME £1.50
- ❑ SNOTT '93 £3.00
- ❑ OOPS! £1.50
- ❑ STOS PAINT 2 £2.50

New Age PDL,
P.O. Box 30,
Leigh-on-Sea,
Essex,
SS9 4AD

ATARI ST REVIEW

NAME..............................

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ADDRESS........................

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- ❑ REFLEX £1.50

Tumblevane PDL,
6 West Road,
Emsworth,
Hampshire,
PO10 7JT

ATARI ST REVIEW

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- ❑ ATARI IMAGE MANAGER £3.00
- ❑ SPRITE WORKS £7.00
- ❑ ASTUBANK £1.50

Caledonia PDL,
250 Oldtown Rd,
Hilton,
Inverness,
IV2 4PT

ATARI ST REVIEW

NAME..............................

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ADDRESS........................

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- ❑ WEGA C DEV. KIT £2.50

SHORT CUTS

Fancy the latest version of UVK, or a solution for your printer problems? Then read on...

NN	File	Data	Entry	Out	Sort	Format	Filters	Set	13/12/93

```
5080 bytes free        □    ENTRY SELECTED BY UP LINK          ▣
58 entries                      F:\APPS\NAMENET\DEMO.NAN
                        Atari                              06/08/92  ⇧
  9 UP REFS
Disk 16:35, 14/11/93    Address . . .
    Atari Lase⇔  ⇧         Atari House,
    Atari Work⇔            Railway Terrace,
    Electric D⇔            Slough,
    Gribnif So⇔            Berkshire.
    Hisoft                 SL2 5B2
    Maxon Scan⇔  ⇩
   DOWN REF
ry 16:35, 14/11/93      ⇧
    Demo Entri⇔  ⇧

                                                             ⇩
  ⇩  ⬦                                              ⬦
```

Nicely Gem'd – NameNet's main screen.

PRODUCT NAME / RATING

PRODUCT NAME	RATING
NAMENET	✪✪✪✪
PRINTER BUFFER	✪✪✪✪
ULTIMATE VIRUS	
KILLER 6.0	✪✪✪✪✪
EDHAK 3.01	✪✪✪

SCORING

All products in this section have a rating out of five stars.

✪✪✪✪✪ = **An absolute essential for your computer...**

✪✪✪✪ = **Great product – well worth investing in!**

✪✪✪ = **Nice item – but you could live without it.**

✪✪ = **Not really – unless it happens to be your cup of tea...**

✪ = **Definite turkey – avoid like the plague!**

PRODUCT:	**NAMENET**
CONTACT:	**SYSTEM SOLUTIONS**
TEL:	**0753-832212**
PRICE:	**£39.95**
RATING:	✪✪✪✪

NAMENET

Review by Graeme Rutt

NameNet is one of a growing number of address managers – unlike the others, which to a man remain in the shareware arena, it is a commercial product sold by Systems Solutions. And although no address manager is going to shake the world, *NameNet* certainly does it's job well.

Any number of entries may be stored in a file to be looked up at will. Several files can be held in memory at once, allowing you to switch between them with a swift button click. The entries may be attached to one another as either up or down links, shown in their respective windows, and it is possible, for instance, to have a file with two main entries "customers" and "suppliers" both of which link upwards to lists of each type of people. An entry may have many links, so if you both buy and sell with a person you could link the same entry down to both main entries.

An entry consists of many items although only a name and type are essential. The type of entry is shown as both text and a (pretty basic) icon and can be used for filtering. As well as the the standard fields, the comment field can be used for any data and has no size limit – in setting up a file for product registrations, I used this field to store the name, serial number and code word for a customer. Entries are also tied to a number of user-definable terms – for instance, in my file I use "Registered", "Paid" and "Disk Sent" to denote where a customer is in my registration scheme.

Filters can also be set; using either the type or class fields just about any entry may be selected. Once entries have been filtered it is possible to skip through them via the left and right arrows on the main window. Additionally, you can get to a single entry very quickly by typing the name into the window in the top left of the screen.

NameNet also has a third type of link – the crosslink. This powerful facility allows different entries to share addresses and telephone numbers which is very useful if more than one person lives or works at the same address. If they move address just change the master copy and all crosslinked entries will be amended. It is even possible to retain a current address whilst crosslinking to another – great

for keeping both home and business addresses for friends and contacts.

NameNet will output in a variety of formats to any printer as standard ASCII, to Epson printers with formatting or to a text file. A simple double-click outputs the entry on the main screen. There's even a facility to dial an entry's telephone number via your modem – an innovative feature!

Like most good software there are at least two ways – often more – of selecting any operation. The interface design makes for easy mouse-work and the keyboard shortcuts have been intelligently chosen. Perhaps the interface could do with minor improvements graphically speaking as it all looks a little cluttered and doesn't rest easy on the eye, but despite this minor grumble *NameNet* is a well designed program with many powerful features.

PRINTER BUFFER

Review by Mike Robinson

One of the major shortcomings of the ST range – TT and Falcon included – is an underpowered printer control integrated circuit which doubles as the sound chip in its spare time! Some machines seem to be harder hit by this problem than others and it can manifest itself in various different ways. Your printer may start printing garbage, or ejecting sheets of paper when you switch off your computer.

This is due to the inaccuracy of the control chip inside the ST and gets worse as the chip gets warmer. The signal fluctuations eventually confuse the printer

Perfect print – if your DeskJet or Laser printer is refusing to print properly, the Printer Buffer may be just the ticket!

but as component tolerances can be quite large in this area, some computers may be fine while others just don't want to know.

The problem is more likely to strike if you are using a print accelerator like *FPrint* and seems to affect DeskJet and LaserJet printers more than other models due to the extra current required to print at 300 dots per inch. In many cases it is possible to cure the bug by removing *FPrint* or *FastPrint* from the system, but the whole purpose of having such a patch is to speed the printing up!

Enter the Printer Buffer. This is a small box, measuring less than 30mm square, that plugs into the printer port between the computer and printer. Rather neatly, it does not use an external power supply or a battery, drawing current from the printer instead. By cleaning up and boosting the signal that passes through it, the problem is completely solved. If your printer isn't behaving itself, then the Printer Buffer may be just the solution you've been looking for.

PRODUCT:	PRINTER BUFFER
CONTACT:	C&P ROSSITER
TEL:	0602-631631
PRICE:	£24.95
RATING:	✪✪✪✪

ULTIMATE VIRUS KILLER 6.0

Review by Maurice Collins

The *Ultimate Virus Killer* started life in 1987 as a PD program called the *Virus Destruction Utility* and evolved into a fully supported commercial package (version 3.0) the following year. With the release of version 6.0, it keeps its place at the top of the virus killing heap, thanks to a redesigned interface and improved virus and boot sector recognition. It can also function as either a program or a desk accessory and is fully compatible with all Atari computers from the ST to the Falcon, as well as new operating systems like *MultiTOS* and *Geneva*.

UVK will now recognise 1,486 different boot sectors, mainly of commercial games, 73 boot sector and 5 link viruses, 43 anti-virus programs and boot sectors, 6 harmless file types and 137 special applications. It can also restore 710 different boot sectors, again mainly on games and demo disks. The list of viruses includes the newly discovered *Beilstein* virus (a horribly clever virus that can mutate into a third of a million different forms) and UVK claims to be the only program capable of defeating it.
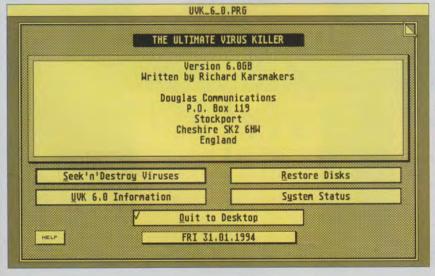
The interface has been improved considerably and although the rather puerile messages about birthdays and such things still exist, they aren't quite as intrusive. For a start the dialogue boxes can be moved around the screen if you have a large screen monitor but perhaps more importantly the keyboard shortcuts are a lot easier to use. All options now have <Alternate> key combinations instead of confusing function key assignments and the dialogues are much larger and easier to understand.

UVK can scan hard disk partitions very quickly looking for link viruses attached to files. You can specify which files need to be checked and the program will report any that are compressed, along with the name of the packing program. These aren't checked of course and you're advised to de-pack them with the relevant program if you suspect infection.
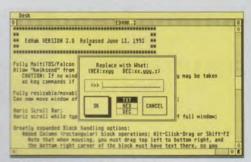
As well as being disinfected, floppies can be immunised against further attack using a clever system that fools the viruses into thinking they have already copied themselves onto the boot sector!

There's no printed manual with *UVK*, largely because updates come every three months or so and the number of addendums and additions would soon be too much to cope with. Instead you get a 70Kb text file on the distribution disk, which makes interesting reading, plus two other authoritative text files listing the boot sectors recognised and the different types of virus and their effects. At this kind of price, there's little to say against *UVK* – if your data and disks are worth anything to you, *UVK* represents the best possible insurance policy.

PRODUCT:	ULTIMATE VIRUS KILLER 6.0
CONTACT:	DOUGLAS COMMUNICATIONS
TEL:	061-456 9587
PRICE:	£12.99
RATING:	✪✪✪✪✪

Safety first – and UVK can be bought from ST Review's Offers pages at just £9.99!

Edhak 3 – a useful text editor.

EDHAK 3.01

Review by Maurice Collins

EdHak 3.01 is a flexible ASCII and binary editor that lets you hack, examine and edit everything from text, data and binary files to disk sectors and your computer's RAM. It is supplied on a single disk complete with an informative A5 manual that runs to more than 50 pages.

Version 3 has a number of improvements including the ability to use smaller system font sizes, a new fully configurable window and better block handling operations. It can be used as a stand-alone program or as a desk accessory simply by renaming it with the appropriate extension though it takes up some 120Kb of RAM as an accessory, which can be a large overhead even on a 2Mb system.

Edhak has a somewhat clumsy non-standard menu – a double column list of options can be dropped down by placing the mouse pointer over the Menu option built into the program's window bar. Although everything can be accessed using the mouse, there is an on-line help facility listing five screens full of useful keyboard shortcuts.

There are three main operating modes. Text mode is for everyday use as a text editor and programming tool while hack and hex modes are there for those needing to look at binary files in either ASCII or hexadecimal format.

In text mode *EdHak* displays all 256 ASCII characters except line feeds with optional carriage returns. It could be used as a word processor, if necessary, as it has all the familiar features like search and replace, word wrap, block cut, paste and delete. Up to ten 80 character macros can also be defined, corresponding to the ten function keys.

EdHak also works in conjunction with *QuickCIS*, the Compuserve off-line reader, and *STalker*, the comms package from Compo. There is an interesting facility called Qwiksend whereby a block of text of any size can be selected using the mouse or function key markers and transmitted straight into a waiting application as if you had typed it in yourself. It uses the ST's keyboard buffer and works with a number of programs including *Pagestream*.

Edhak isn't as stylish as some of the better shareware editors like *Everest* but it has some fascinating features and should serve you well, particularly if you're into hacking, programming or generally messing about with your system.

PRODUCT:	EDHAK 3.01
CONTACT:	DOUGLAS COMMUNICATIONS
TEL:	061-456 9587
PRICE:	£14.99 (£9.99 at present)
RATING:	✪✪✪

Andrew Wright continues his series on becoming an expert with your Atari.

BEAT THE

PART THREE: WORKING WITH FILES

To many Atari owners, the GEM desktop and its mouse driven interface is anything but intuitive, particularly if you're not particularly computer minded. Too often those of us who spend all day and every day with computers take it for granted that a quick tutorial will suddenly make everything fit into place.

There are two main sides to the learning process, whether it's learning to play the piano, kick a football or get to grips with home computing. The first is knowledge but it needs to be followed up with the other ingredient – practice.

In last month's issue we spent some time formatting and creating a boot disk. If you followed the tutorial through you will have created a boot disk with an empty AUTO folder and a single desk accessory. This was achieved mainly by using that essential desktop skill, copying a file. It is the single most important thing you can learn as without the ability to

Figure 1– the root directory

copy a file, you'll never master the machine.

This month we'll reinforce those file copying techniques and show you a few more. Practice makes perfect, as they say!

ON COURSE

First of all, before we start work, we need a crash course on navigation. Not around the world but the desktop. The desktop can be a very confusing

place especially when you're working with two disks or a disk containing lots and lots of nested folders. The term "nested" refers to the situation where you have folders within folders within folders that might themselves be within folders!

For example, on my hard disk I have a folder called GRAPHICS. Inside that folder are two more folders called BITMAP and VECTOR, corresponding to the types of graphic file. Inside BITMAP are a dozen or so others such as TIFF, DEGAS, IMG and NEO, each corresponding to the actual graphics file formats they contain.

That's fine as it goes but how do you tell where on earth you are in a series of nested folders? And how do you navigate through them to get what you want? The first thing to do is look at the top of the drive window containing the files – if you are currently looking at the root directory of disk A, you should see A:\ displayed in the centre of the move
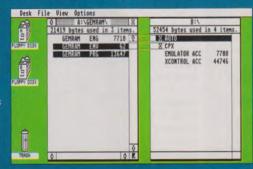
COPYING MULTIPLE FILES

In this example we're going to copy two files at once from the issue 21 cover disk and insert them in the AUTO folder of the boot disk we created last month. If you don't have it, try the back issues department – or improvise using another disk.

STEP BY STEP

1 *Use your new found skills with folders and window sizing to get two drive windows side by side. Here A is the cover disk, B the boot disk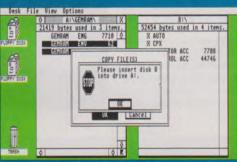. Hold down the <Shift> key (this lets you select more than one file) and select first GEMRAM.ENV then GEMRAM.PRG. Notice both turn black.*

2 *Drag the files as one across to the drive B window and position them over the AUTO folder until it too turns black. Click on OK if the confirmation dialogue box appears.*

3 *You'll be asked to do some disk swapping (TOS unfortunately only reads then writes one file at a time).*

4 *After all the dialogue boxes clear, click on the B window and double click on AUTO to check the files are there.*

SYSTEM

Desk   File   View   Options

A:\MISC\
0 bytes used in 4 item
COPIERS
EDITORS
GRABBERS
UTILS

Figure 2 – down a level

bar, the grey area at the top.

Figure 1 (in low resolution for clarity) shows this situation on a typical boot disk. There are four folders and two accessories in the root directory. We'll call these "first level" folders.

Now we select the folder named MISC (click once on it until it turns black) and from the **File** menu select **Open**. The window changes as in Figure 2, and displays the contents of the folder called MISC – in this case four more "second level" folders. Notice that the text along the move bar also changes to tell us where we are.

Now if we move back to the **File** menu and select **Close**, we get back to where we started. Now's the time to try another method – this time double click on the folder called MISC. Again the folder opens to

reveal the second level contents. Click the square gadget in the top left of this drive window and you're back again.

The second method is the quickest and the best one to practise. After a while you should be able to descend ten or more levels and back again in a matter of seconds. Why would you want to do this? The folder system was designed to make file management easier.

Look at the way the graphics files were stored in the earlier example – imagine how much easier it is to find things when you use folders to the full. That letter to the editor would be much easier to find if it was stored in a folder called ST REVIEW, inside a folder called LETTERS, inside a folder called DOCS, than if it was saved in the root directory of a disk with a hundred others!

CONFIRMATION

You may have noticed that every time you try and do something that the operating system considers pretty drastic like copy or delete a file, you are asked to confirm your choice by a two button dialogue box. You aren't presented with any options other than to proceed (OK) or cancel and this is one way of making you *Click to confirm...*
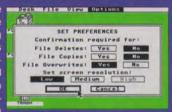
stop and think what you are about to do. By and by this can get jolly irritating, particularly when you're a more experienced user. If I drag a file to the dustbin, the chances are I'm doing it for a reason – I want to delete it. If you find yourself getting frustrated at the endless clicking for confirmation, you can tell the operating system not to ask for it.

Look under the options menu and select the Set Preferences... entry. You will see the options for setting the screen resolution at the bottom (with High greyed out if you have a standard colour monitor or TV) and the three confirmation options above.

If the File Deletes box is selected (white text on a black background) you will be asked to confirm when you try and delete a file. If the File Copies box is selected you will be asked to confirm when you try and copy a file. Finally, if the File Overwrites box is selected you will be asked to confirm when you try and copy a file on top of another file of the same name. You can change these settings to suit yourself.

Many users prefer to have delete confirmation on and the others off. This makes copying much quicker and easier but gives some protection against accidentally erasing an important file. I prefer it the way you can see in the accompanying screenshot – this makes deletion and copying fairly painless but pops up an *This way you don't get bugged* alert if I already have a file with *by constant dialogue boxes –* the same name in the destination *but you may accidentally* directory. *erase files.*

DELETING AND MOVING FILES

In many ways, deleting and moving files is just like copying them. Deleting a file is easy – all you do is select a file, hold down the left mouse button and drag the doomed file over to the dustbin icon until it turns black. I know it's called TRASH but that's because of the ST's American origin. I'll be showing you how to change it to something a little more English in a future article.

Depending on which confirmation option you have selected (see the other panel on confirmation) you will get a DELETE FILE(S) dialogue box where you have to click OK to proceed. The file has now been erased from your disk and you'll never see it again. Actually that's not true at all – the directory entry gets changed so it's no longer recognised by the system and there are special programs that will retrieve deleted files, but let's not run before we learn to walk...

Moving files is identical to copying files except that the original is automatically deleted. For example, when you copy a file you end up with two copies, the original and the copy you've just made. When moving, you end up only with the copy. The bad news is that
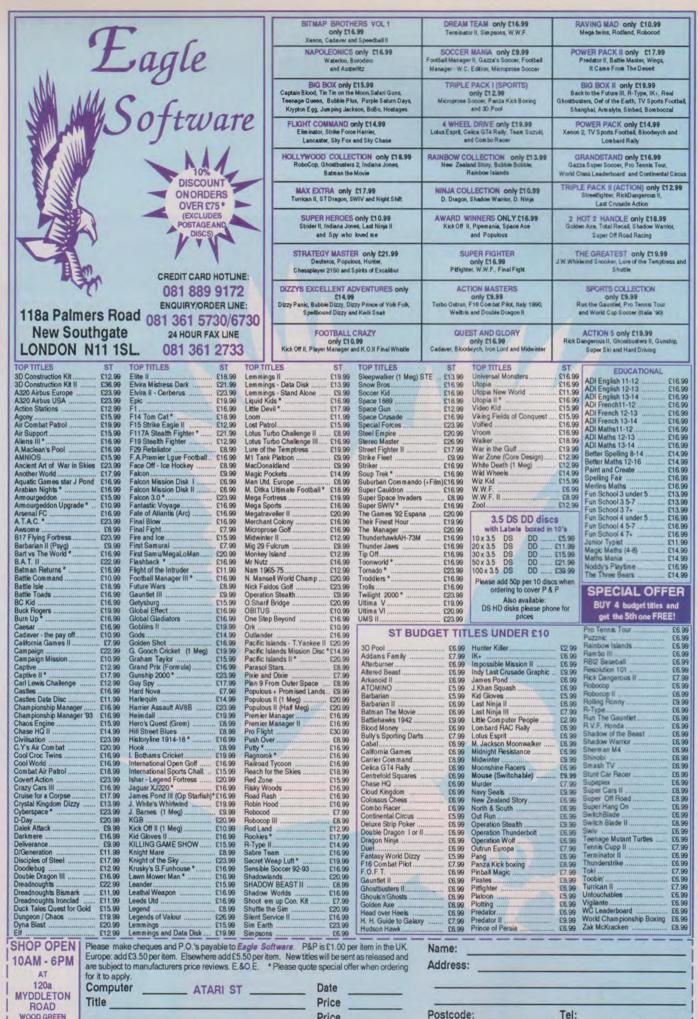

moving is only possible if you have TOS 1.04 or a later machine. To move a file or files you carry out a normal copying operation but hold down the <Control> key when you first select and drag the original file(s). The operating system does the rest.

On the move...

Select a file and drag it towards the dustbin icon (again low resolution for clarity). When the dustbin turns black, you know the lid is open, so to speak. Let go of the mouse button and the file is dropped inside – if you have confirmation on, you'll get a final warning dialogue box.

TOP NOTCH

To help you get the most from the utilities we frequently provide on our cover disk, Ofir Gal continues to build up the perfect blend of desk accessories and auto folder programs...

Before looking at more Auto programs that can help get the most out of your system, let's first examine one of the most debated system bugs on the ST – the forty folder bug...

HOW MANY FOLDERS?

The original version of TOS had a serious problem with its memory management. Without any warning, the system would suddenly display the message "OUT OF INTERNAL MEMORY – USE FOLDER100.PRG TO GET MORE – SYSTEM HALTED – PANIC!". The system would virtually halt and you would be forced to reset and start again.

The reason for this annoying bug was eventually traced down to the way in which TOS manages its memory. Whenever a program opens a folder and loads or saves a file, TOS allocates a small section of memory (about 100 bytes) which it needs to access the file inside the folder. Once the file is closed, TOS should return the memory back to the system so that it can grab it again when needed. Unfortunately, TOS versions 1.00 and 1.02 simply forgot to return that memory! TOS has a limit of about 4000 bytes for

this purpose and so after accessing 40 folders, the system runs out of memory and crashes.

The root of the problem lies in the way memory allocation is handled deep down in TOS and rather than bore you with the technical details, add a small program called *FOLDRxxx.PRG* to your Auto folder. The program works by pre-allocating memory for folders. For instance, naming the program *FOLDR100.PRG* adds 100 more folders so reducing the likelihood of the error occurring.

The good news is that Atari fixed the problem with the release of TOS 1.04. The bad news is that they have fixed the wrong problem! There is still a bug in the memory management only it is less likely to bite. It is therefore recommended to use the Folder fix program in all TOS versions, even on a Falcon with TOS 4.04. Installing this program also eliminates other memory-related problems.

SPrint comes with a simple desk accessory to get the best performance out of your printer.

Batch Size In Bytes	Timeout In Milliseconds
40_	4__
Clear	**Off**
Set	**Abort**

SPEED UP THAT PRINTER

Using *GDOS* or *SpeedoGDOS* for printing has the advantage of producing much nicer looking documents in comparison with simple text printouts. You can add graphics to your documents and use a large selection of fonts in various sizes. The disadvantage of a font-based application is that it tends to be very slow when printing. The truth is that it is not the program's fault – the blame, as usual, lies with TOS.

There are several programs that can speed up printing to a great degree, with two basic methods of achieving this. The first is to replace the TOS routines that handle printer output with much faster ones. *FPrint* is such a program and with a size of only 280 bytes, it performs miracles with inkjet and laser printers in particular. *Fprint* is simple to install – just copy it over to your Auto folder and reboot. There are no complex parameters to worry about as the

GEM Spooler v2.2	NO ERROR OCCURED	BYTES PRINTED: 0
1:\SPOOL\PRN0.SPL		Hold 3 P --- 4

Spool	Jobs	Timing	Printer	☒ Halt all
Setup	Save	Delete	Sort	Quit

GSpool features a job manager dialogue box where each job is listed and can be moved or deleted. The program offers many more options such as accurate printer timing which, like SPrint, lets you optimise printing speed.

Even TOS 4.04 which is shipped with the latest Falcons has the "Out of internal memory" alert hidden deep inside it, indicating that the old 40 Folder bug is still there waiting to bite...

Each print job can be given a priority, put on hold and the printer reset before GSpool starts. The job manager supports multiple copies of each job.

program is not configurable. *SPrint* is a similar program that offers a combination of the *FPrint* method with the addition of a RAM buffer. Instead of trying to print everything in one go, the data is temporarily stored in a buffer so that the application you are using is fooled into thinking that the printout has been completed. This lets you get on with your work while *SPrint* carries on printing in the background.

The main disadvantage of this method is that it requires a lot of memory for graphics output, typically 0.5Mb per page! However, even a small buffer can help speed up printing and *SPrint* can be configured via an accompanying desk accessory, enabling you to set it up for maximum performance.

How much acceleration these programs actually achieve varies according to printer and system. Typically, printing time is halved or better. Both *FPrint* and *SPrint* are freeware. One program that is not available in the public domain is *FastPrint* which comes as part of *FontKit Plus*. Written by Jeremy Hughes, the author of *ImageCopy*, this is very similar to *FPrint* and the two often get confused. In my experience, *FastPrint* is the fastest of the three (see table).

SPOOLERS

If you have a hard disk there is another option for improving printer handling which is known as disk spooling. When running a spooler program, all printout is redirected to a disk file. Since writing a file to a hard disk is much faster than printing it out, the print operation is completed very quickly and you are free to carry on with other tasks. The spooler then carries out the printing job in the background.

There are a variety of spoolers to choose from, but my personal favourite is *GSpool* which features a simple-to-use GEM interface and runs as a desk accessory. The program is available as shareware and includes several utilities to customise the way it works. Installing *GSpool* is rather simple and only involves copying the accessory file to your boot drive and

resetting the computer. The disk path needs to be set as well as a few other parameters.

GSpool uses the <Control>+<Shift> key combination to call it up even if you cannot access the menu bar for some reason. It also keeps a log file which means that even if the system crashes while printing, *GSpool* will

carry on once you reboot the system. It features a job manager dialogue box where each spool file can be given priority over others and can be printed more than once and also offers the options of resetting the printer before each job and sending a form feed after a job which ejects the last page.The

printer timing dialogue box can be set to achieve the best throughput, but does require a little experimentation. When setup correctly, it is possible to carry on writing, playing a game, or anything else while *GSpool* is printing away. V2.2 is available as shareware and you get the latest version upon registration.

PRINTING SPEEDS

Program	Normal	FastPrint
Calligrapher	180	80
Atari Works	128	50
STraight FAX	100	66
1st Word Plus	34	33

The table above shows how *FastPrint* affects printing times (in seconds), each application outputting a single page to a DeskJet 500. Notice how text-based programs are hardly affected. You can expect similar improvements from *FPrint* and *SPrint*.

The contents of a boot sector as displayed by KnifeST, a disk editing program. This boot sector contains a Fast Copy anti-virus and is quite harmless.

Last month we introduced you to the powerful editing features of the Replay Stereo editor. This month, Mike Robinson takes a further step forward with a look at sample looping.

Looping is a technique that is used to create long samples from relatively short ones. Sample looping is heavily used in dance music to create background grooves from "break-beats". The process involves sampling a short drum beat from a record, usually from a drum break or solo, and editing the sample with software like the *Replay Stereo* editor.

The next step is to remove unwanted fragments from the beginning and end of the sample, leaving exactly one or two bars of the beat. The zoom-in buttons are used to get an accurate view of the beginning and end of the sample.

Once the sample is trimmed to perfection, you can activate the looping facility. In loop mode, a sampler plays the sound repeatedly. Each time it gets to the end of the

The flute sample is only 1.27 seconds long, yet with the help of the editor it is possible to extend it indefinitely without needing any extra RAM or disk space.
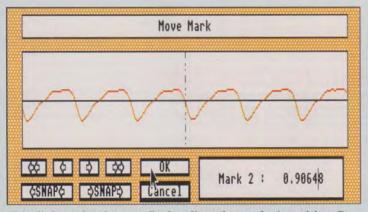
LOOPING THE LOOP

sample it jumps right back to the beginning of the loop and plays it again. In this way, a short segment of a drum beat can be used for the full length of a song.
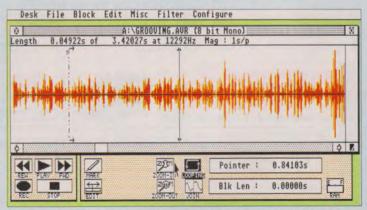
GROOVING...

On this month's cover disk you'll find a sample file called GROOVING.AVR. This is a mono 8-bit sample just over three seconds long. Load the sample

into *Replay Stereo* and press Play. You will notice that the sample repeats itself indefinitely; press the right mouse button to stop. This sample contains two markers, and the Looping icon is selected. *Replay Stereo* plays the sample from the beginning, but once it reaches the second marker it jumps back to the first marker and then repeats the section in between until it is told to stop. Unlike a "broken"

record, it is quite difficult to hear the join! This is because the marker points were carefully selected at what is referred to as "zero-crossing" points.
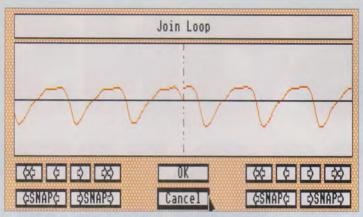
Before you start worrying about technicalities, you have to find a good loop point which is all about musical timing. Ideally, you should set the first marker exactly at the beginning of a musical bar and the second exactly four beats later. The

This dialogue box lets you finely adjust the marker's position. By using the snap buttons, it's simple to find suitable looping points.

You can set the waveform display mode to Envelope which you may find useful when trying to create loops.

The Join Loop dialogue box allows simultaneous adjustment of both loop start and end markers.

THE AVR FILE FORMAT

The AVR file format was developed by AVR for use with their original sampling cartridges. It has since become more or less a standard format on the ST and Falcon. Many programs support AVR files and there are plenty of shareware and PD programs for conversion. Other common file formats are WAV, MOD and SND.

The advantage of the AVR format is that the loop points and markers are stored in the file along with the sound; most other formats do not cater for this. The format also incorporates MIDI keyboard mapping and other useful features.

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sample from the cover disk is just over a bar long and the markers are set to the beginning and end of the bar.

FINE TUNING

Click on the Edit icon at the bottom of the screen, select *Mark 1* in the following dialogue box and click on "OK". This brings up another dialogue box which allows you to adjust the position of the first marker. You can move the marker by simply pressing the left and right arrows, or by entering a new value in the box. The accuracy is almost down to a single sample, but the down side is that you have to "OK" the dialogue box and exit it to hear the difference, which can be extremely subtle.

To simplify things, *Replay Stereo* has two snap buttons. The function

of these is to automatically suggest possible loop points. This isn't down to pure guesswork; the program searches for a point where the waveform crosses the horizontal line in the centre of the screen, hence the name "zero-crossing points". By snapping both markers, you effectively ensure that there is no jump in volume at the join. Not every snap point sounds perfect, so it is a case of trial and error.

MORE LOOPING

There is another type of looping which is mainly used when trying to emulate "real" instruments. The flute sample from last month's cover disk is a perfect example. Normally, samples are quite short in duration due to memory and disk space restrictions. A real flute, however, can

play a sustained note for quite a while, much longer than the average sample. Instead of sampling as long a note as possible, only a short sample is used and a suitable portion of it looped. Unlike the loop in the previous example, this loop is only half a second in length while the whole sample is just over a second long.

The first part of such a sample is not suitable for looping but is left in to add to the authenticity of the sound. As you can see, the sample is already perfectly looped, courtesy of the programmers at AVR, so we can take a peek at how they have managed it. Click on the Edit icon and select the first marker for fine editing. The marker is located exactly on a zero-crossing point. If you click once on the double arrow button to the very left, the marker will move to a peak in the waveform. Click "OK" to exit the dialogue box and play the sample. You should be able to hear a click each time the sample loops.

Now click on the Join icon which displays the meeting point of the loop. It is easy to see why the loop is not smooth as the joins do not match.

There are two sets of arrow and snap buttons in this dialogue box; the ones on the left adjust the end point while the right ones control the start point of the loop. If you try the snap buttons on the right you will be able to see how *Replay Stereo* finds the best loop points. Once the join looks smooth try playing it back, and in most cases it will be impossible to tell where the loop point is.

YOUR TURN...

I hope this tutorial has helped you get to grips with *Replay Stereo* and with sample editing in general. Sampling and looping is considered an art form and it takes a lot of practice before you can setup the perfect loop...

Next month, we'll take a look at using the special effects!

LESSONS IN LAYOUT

Nial Grimes unwraps the third instalment in our DTP series and begins to explore full page layouts...

Over the past two issues we've taken a careful look at all of the elements that go to make up a desktop published page. Now the moment has arrived to bring the whole lot together and begin work on an A4 design.

Stepping onto a whole page for the first time can seem daunting. With so much extra space to play with, the design process becomes just a little bit more complex – a greater range of point sizes are now usable and there's more room for experimenta-
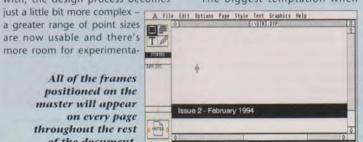
All of the frames positioned on the master will appear on every page throughout the rest of the document.
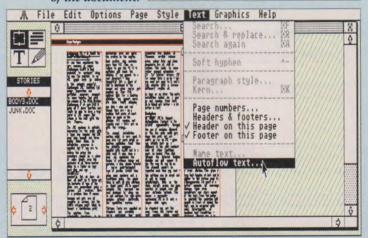
tion. So you've got the blank page on the screen and a whole world of opportunities lie before you – what comes next?

SPACE – THE FINAL FRONTIER
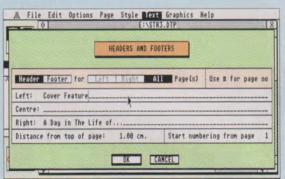
The easiest lesson to learn when it comes to page layout is that of using white space effectively. Yes, believe it or not, blank paper is just as important as any other part of the page. All modern designs are very roomy and a wide leading, good margins and well spaced columns can in themselves take you a long way towards a nicely balanced page. Try to break up big chunks of text in articles. Pictures, boxouts or pull-quotes – a small amount of text lifted from the body text – are priceless in taking the monotony out of articles or catalogues.

The biggest temptation when

Once you've decided on a basic column set-up, click on "Autoflow" and Timeworks will lay the rest of the document out in the same format.

dealing with a full page is to cram as many words onto a page as possible, but when you think about it carefully this makes no sense at all, either in design or business terms. After all, if two catalogues or magazines sit on the shelf, one tightly packed, the other relaxed and easily readable, which will the customer choose? Remember, readers mean revenue, so the the more expensive catalogue in printing terms is probably more economical in the long run.

Never forget that simple designs are often the most effective. Perhaps the classic example is Ocean's *Batman – The Movie* advert, which featured solely a Batman logo – no words, no explanation, but it worked! The game was a huge success.

It all boils down to keeping the reader in mind and thinking carefully about what you are trying to achieve through the page. If you are designing an advert, you need to grab attention – make that your aim. If you're putting together a magazine, the goal is slightly different; yes, you still need to rouse interest, but

Text entered into this dialogue will appear at the top and bottom of each page. "Header" and "footer" text styles are created to allow adjustment of fonts.

the page also needs to be approachable, readable and easy on the eye too.

YES MY MASTER

Of course, the one aspect we haven't taken on board yet is that of design style. Usually the basic look of the page will be more or less decided by its application. To use an extreme example, a funeral director's catalogue would differ a great deal from a fashion designer's in style!

In this regard it makes good sense to practice various design styles until you have a good range within your grasp. Even within the boundaries of style there's plenty of room for experimentation. Having said that, it is important to keep the same approach throughout a document. For example, the page numbers must appear in the same place and the column set-up will usually be regular too.

Desktop publishers make it very easy to put both of these concepts into action. For example, once you've

MASTERS OF THE UNIVERSE

The master page is best viewed as a template for the whole document. *Timeworks* takes all of the frames on the master and dumps them on each new page as it is added. Because of the way the package thinks, it's always best to set up this page before you do anything else.

Headers and footers are a neat addition to this principle. For example, entering "Goat Herder's Monthly – Page #" into the "Headers and footers" dialogue will add those words together with the correct number to the bottom of each and every page – clever huh?

TIMEWORKS TIPS

● **Hide pictures:** When you are switching rapidly between view sizes, *Timeworks* can slow to a crawl. Try using "Hide all pictures" to blitz the precious seconds spent updating graphics.

Screen redraws can be given an extra injection of speed by hiding all of the pictures.

● **Save style sheet:** A style sheet contains all information on guidelines, paragraph styles and the master page. An option to load all of these bits and bobs is given whenever you choose "New" from the "File" menu.

● **Headers & Footers:** A new style is added when your document contains headers or footers. Use the "Paragraph style" option to adjust the font and size.

● **Page numbering:** For most purposes the default page numbering system is fine. But if you're preparing a technical document, you might want to switch to Roman numerals which can be done through the "Page numbers" dialogue box.

● **Master page:** To edit the master, summon the "Goto page" dialogue box and click on the check-mark with the left mouse button.

The master page can be accessed from this dialogue – just click on the tick and you'll be there!

decided on a basic column set-up, *Timeworks'* autoflow option can be used to lay out the rest of the document for you. In addition, most packages feature some form of master page. In effect, anything you position on this page will appear throughout the rest of the document without lifting a finger. To illustrate, take a look at this month's walk-through. Both the magazine information and the black frames are part of the master page and will appear on every new page.

A CERTAIN STYLE

Even with all this knowledge in mind, it can be difficult to come up with a

good-looking page. If you find yourself in this situation it often helps to sketch out a page before you start – a rough two-minute draft has the ability to tell you whether a layout is going to be successful. It's surprising just how telling a few hand written headlines and squiggles for text can be!

Of course, there are only so many guidelines that can be given; the ultimate aim is to create a unique design style of your own. With that goal in mind, find a layout you like, pick the best bits and copy them! Even experienced desktop publishers will use this technique when they are faced with a new challenge (although getting them to admit it is a different matter altogether!). In time you will be able to add a little sprinkle of inspiration and will find yourself well on the road to Fleet Street...

Make sure margins don't creep too far towards the edge of the page otherwise the design will feel cramped.

STEP BY STEP

CHOCKS AWAY!

This month we're going to deal with a little more text and create an article for a fictional magazine called *Flight Fanatic*...

Having laid out all of the standard elements onto the master page, import the article itself (it's in 1st Word Plus format). Reduce the number of columns to four and flow the text across three frames, as shown above.

Next lay in the Spitfire picture and crop it to fit nicely onto the page. Create a number of transparent frames and lay them along the left hand edge of the picture. Lastly squeeze the text frames downwards to make way for a striking headline.

Now liven up that dull chunk of text by adding a pull quote and drop-cap. Remember to use italic styling and bordered frames to highlight the quote.

Finally drop the headline into position, size it up to 48 points and add the by-line just underneath it. If you get into any difficulty take a quick peek at the finished article which can be found on this month's cover disk.

GEMMING

The first in a series of tutorials from Ofir Gal to help you start programming GEM applications and desk accessories.

GEM is probably the most difficult yet rewarding part of the operating system, so a little perseverance is going to be needed here. The cover disk this month contains *the* essential tool for GEM programming – a resource file editor. *K-Resource* and *HiSoft BASIC* are all you will need to create the most complex of GEM programs.

WHAT IS GEM?

The Graphic Environment Manager consists of two separate libraries – the AES and VDI, both of which are included in *HiSoft BASIC* using the *LIBRARY* statement. The BASIC names are *gemaes* and *gemvdi*. The VDI is the larger of the two and is used to output text and graphics to the screen or a printer via *GDOS* or *SpeedoGDOS*. The AES is the part of TOS that is responsible for windows, dialogue boxes and menus. GEM programs always have the extension .PRG, although some non-GEM programs also use this extension. Writing a GEM application means jumping in at the deep end; there is no gradual way of getting there, you just have to go for it!

```
LISTING 1
'loading a resource file

DEFINT a-z
LIBRARY "gemaes"
'$option k50
'$include gem1.bh

IF FNrsrc_load("GEM1.RSC")=0 THEN
    junk=FNform_alert(1,"[3][Error while loading|resource file.][ Abort ])
    SYSTEM
END IF

'rest of program goes here

'freeing a resource file before quitting
junk=FNrsrc_free
SYSTEM
```

OBJECT TYPES

The AES supports 13 object types which the programmer can select while constructing the resources. Most objects can have a border, some can have a colour as well. The possible objects are:

Box: A plain box that can have different attributes like border thickness and colour.

Text: An object with text in it. The text can be aligned left, centre or right.

BoxText: Text surrounded by a box.

Image: A monochrome image of limited size. Normally used for logos.

ProgDef: This is a special type which is used for displaying object shapes that are not provided by the AES. Round buttons are a typical example.

IBox: This is like a box but is invisible if the border thickness is zero.

Button: The most common object. It contains a text string, which is always centred, and a fixed border. The border thickness is doubled on default buttons.

BoxChar: A box with a single character in it. One possible use is in file selector drive letters.

String: Just a text string – no border and always left aligned.

FText: This is an editable text field. For an example of this, select "Install Drive" from the desktop. The text field for entering the drive letter and name are FText objects.

FBoxText: Just like FText, but enclosed in a box.

Icon: An icon is an image with a mask. The mask is used to create a background for the icon and is normally white.

Title: This object is only used in menu bars.

Cicon: This fourteenth object was added with the introduction of the new AES as used on the Falcon. It is similar in appearance to the standard icon but typically contains 16 colours.

TOS OR GEM?

Programs that do not use GEM are normally referred to as TOS applications and mainly use the .TOS or .TTP extension. They normally have a limited interface, often based around a command line with a blinking cursor. On the other hand, GEM applications are much friendlier to use. They have self-explanatory menus and dialogue boxes and let you use the mouse to click on buttons, select text and pull down menus. A well designed GEM program is nice to look at, easy to learn and fun to use.

TOS programs have a few things going for them. They are normally much smaller, use less memory and tend to be faster. And, of course, they are much easier to write. At the end of the day, users almost always prefer a GEM application – for instance, it is virtually impossible to have a complex word processor or database program without using GEM.

THE AES

The key to programming a GEM application or desk accessory is knowing how to use the AES. A resource builder like *K-Resource* is used to create the resources the application needs. Follow the tutorial on pages 10 and 11 and then create a resource file called GEM1 with a single form – a dialogue box as shown in the boxout entitled "WHAT'S IN A DIALOGUE BOX". The header file must then be converted using the conversion program *KR2HB.TTP* which is supplied on the cover disk – see the boxout entitled "USING KR2HB.TTP"

The resource file is loaded into a program using a single AES call, *FNrsrc_load*. This function takes the file name as a parameter and returns 0 if it failed. Failure is rare but can happen, in which case the program should not continue. The standard format for handling resource loading is shown in listing 1. You should always remember to remove a resource file before quitting. This is simple enough; just call *FNrsrc_free* and the AES does the hard work for you.

Note the use of the "k" option which is used to reserve 50Kb of memory for the program, freeing the rest for the system. The *$include* statement imports the header file

GEMBench is an example of a full-blown GEM application written in HiSoft BASIC. It features menus, windows, dialogue boxes and icons.

IT UP

which will be used later on to manipulate the dialogue box.

The next step is to display the dialogue box you have created in *K-Resource* and interact with it. It won't do anything useful at this stage, but will be used for practice before we embark on a full GEM program.

FORM HANDLING

There are essentially two AES calls that are used to first display and then interact with a dialogue box. The drawing call is *FNobjc_draw*, a function that returns 0 on failure. This is highly unlikely, so there is no need to check the return value, something that applies to many other AES calls. Listing 2 shows the full process; let's take it step by step...

First you need to obtain the memory address of the form that is required for the following calls. *FNrsrc_gaddr* does the trick, placing the address in the variable *tree&*. This is followed by two *FNwind_update* calls which are essential and will be fully explained later on in this series. *form_center* (yes, it does have an American spelling) is then called to centre the dialogue box on the screen prior to displaying it. *form_dial* is yet another call that seems to have no purpose but is in fact crucial and at last we can display the dialogue with *FNobjc_draw*.

FNform_do is the function that actually handles the dialogue box, much like *FNform_alert*, waiting for the user to click on a button. *FNform_do* is capable of much more as you will see next month. When the dialogue box is finally exited, another series of AES calls is made to return the AES to its original state.

Note how the CONSTant FORM1, which is the name of the form, is used to obtain the address of the dialogue box. Next month I will carry

on with this series, providing a fuller explanation of form handling and also showing you how to use radio buttons and editable fields, gradually introducing you to many of the tricks the AES is capable of.

```
LISTING 2

'form handling

junk=FNrsrc_gaddr(0,FORM1,tree&)

junk=FNwind_update(1)
junk=FNwind_update(3)
form_center tree&,x,y,w,h
form_dial 0,0,0,0,0,x,y,w,h
junk=FNobjc_draw(tree&,0,10,x,y,w,h)
result=FNform_do(tree&,0)
form_dial 3,0,0,0,0,x,y,w,h
junk=FNwind_update(2)
junk=FNwind_update(0)

IF result=OKBUT THEN
  PRINT "OK"
ELSEIF result=CANBUT THEN
  PRINT "Cancel"
END IF
```

NEW COMMANDS

FNrsrc_load(filename$): Loads a resource file into memory.

FNrsrc_free: Removes a resource from memory. Must be called at the end of a program.

FNrsrc_gaddr(type,index,tree&): This function obtains the address of a tree or an object and places it in the variable *tree&*.

FNwind_update: This call is used to take over the screen or return it to the system. A fuller explanation of this rather complex call will be provided later in the series.

form_center tree&,x,y,w,h: Used to centre a dialogue box. The new coordinates are returned in x,y,w,h and may be used later. Note that this call does not actually draw the dialogue box.

form_dial flag,x1,y1,w1,h1,x2,y2,w2,h2: Like *FNwind_update*, this call is used for various reasons that will be explained in detail later in the series.

FNobjc_draw(tree&,start,depth,x,y,w,h): This AES function draws one or more objects, depending on the values of the parameters.
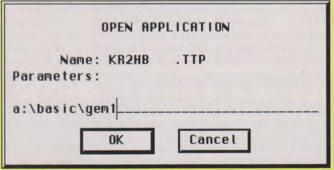
FNform_do(tree&,edit): The actual form handler. Returns the index of the exit button selected by the user.

WHAT'S IN A DIALOGUE BOX

This simple dialogue box is made up of three AES objects. The outer box is a standard one with an outlined border. There are two buttons, each set to be both a selectable and an exit object. In addition, the OK button is also set as the default object which gives it a thicker border.

You should name the form FORM1. Each object also has a name which is used internally. Make sure the OK button is named "okbut", and that the Cancel button is called "canbut". Remember, these names are going to be used by your program and are separate from the text that actually appears in the buttons. The object names are CONSTants that represent the index for each object and the index value is used to access the object in the program code. Whenever you save a resource file in *K-Resource*, an additional file with the extension .H is created. This file contains the CONSTants as they would be used in a C program. We provide the program *KR2BH.TTP* to let you convert this file to a BASIC format.

Your dialogue box called GEM1 should look like this...

```
+-----------------------------+
|                             |
|   [  OK  ]    [ Cancel ]    |
|                             |
+-----------------------------+
```

USING KR2HB.TTP

K-Resource produces C-style header files. You will need to use this program to convert such headers to BASIC each time you modify the resource file. The program is easy enough to use.

If you are using the standard desktop on TOS versions before 2.xx, double-click on the program and type in the full path of the file to convert.

You do not have to type in the extension. If you have TOS 2 or later, or an alternative desktop, you can simply drag the file and drop it on the KR2HB icon. The conversion only takes a few seconds and should produce a file with the same name but with the extension .BH, which stands for BASIC Headers.

```
+--------------------------------------------+
|             OPEN APPLICATION               |
|                                            |
|      Name:  KR2HB    .TTP                   |
|   Parameters:                              |
|                                            |
|   a:\basic\gem1_____ |
|                                            |
|      [   OK   ]      [  Cancel  ]          |
+--------------------------------------------+
```

To use KR2HB.TTP just type in the name of the header file.

Programming In C

WHAT A GEM

To make C programs more visual requires GEM. Jon Ellis makes the introductions...

In the last tutorial, we ended with a question: why is the following bug particularly bad news ?

```
while (TRUE);
  do_useful_function();
```

The answer is that the function is never called, and control remains at the *while* line indefinitely. The effect of this is that the machine "hangs" in an unresponsive state, and a reset is needed to get out. Definitely one to avoid!

GETTING FANCY

So far in this series, all of our programs have featured very basic command line interfaces, made up of functions from the ANSI C library like *gets()* and *printf()*. No programming series involving the ST can carry on for long with this approach, as it is failing to exploit one of the operating system's most useful parts: GEM.

We have covered enough of C already to enable us to begin to explore how to use GEM to create a more sophisticated user interface. To unlock the potential of the ST in this way, a C program needs to be able
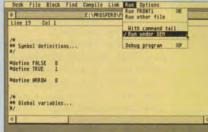

to access GEM. This is done using a library of GEM interface functions, or **bindings**; see the box for more details.

GETTING READY

All we need to do is make a couple of changes to the configuration of the compilation environment to allow GEM programs to be compiled. In *Prospero C*, the GEM library is the file *CGEM.BIN*. This library will have to be included when our programs are linked. This is simply a matter of telling the C workbench what we want: click on the "with CGEM" item on the "Link"menu, so that it becomes ticked.

Up until now, none of our programs have used the mouse. When run from the workbench, they have started in an environment with a blank white screen, a black text cursor and no mouse pointer. GEM programs expect to find themselves running on the shaded desktop background with an active mouse. To tell the workbench to give GEM

Linking the CGEM.BIN GEM library.

Preparing to run a program under GEM.

programs the right environment, tick the "Run under GEM" item from the "Run" menu.

Finally, these changes to the workbench setup should be saved using the "Save configuration" option from the "Options" menu.

LET'S GO

Having made these changes, the C workbench is now ready to compile our first C program using GEM. In

Your first GEM program!

the *C.TUT* folder on the cover disk is a file called *ALERT.C*. Load this file into the workbench, and compile and link it. If the linker throws up error messages complaining of "unsatisfied externals" like APPL_EXIT, APPL_INIT and so on, the *CGEM.BIN* file has not been included in the link.

Running the program results in the display of a simple alert box with one button. Clicking the button returns control to the desktop or the workbench, depending on where the program was run from.

HOW DOES IT WORK?

Let's look at how our first GEM program works. There's a lot of material that's new in this program, as a quick glance at the listing will show. The remainder of this tutorial will focus on the structure of the program and the new C language features, leaving a detailed explanation of the GEM calls for the next instalment.

If you've not already got hold of the GEM manuals via the Readers' Offer, now is probably a good time to do so. Trying to write software that uses GEM without documentation can be very frustrating.

Back to the listing. The first thing to notice is that the program includes two new header files. These contain declarations for the functions contained within the GEM library. The AES part of GEM deals with high level facilities like drawing and animating dialogue boxes. The VDI provides much lower level operations such as drawing lines and text.

main() is very simple. It calls functions to set up and close down the GEM programming environment. Between these calls, it actually does the apparent work of the program: displaying an alert box using the GEM call, *form_alert()*.

The key parts of the listing are the functions that do all the GEM housekeeping. Although these do little that the user can see, they are essential. In fact, *initialise_GEM()* and *shutdown_GEM()* are much more comprehensive than we strictly need at this point, but you should be able to use them as useful building blocks in your own programs.

initialise_GEM() is the more complicated of the two functions. In addition to the various new GEM library functions, it also illustrates some new C features. First, all the local variables are of the "short" type,

which is a variety of integer (see box) of the right size for dealing with GEM.

The numbers in curly brackets forming part of the *work_in* array declaration are a list of initial values for the elements of the array. You'll remember from an earlier tutorial that local variables with the auto storage class begin life with junk values, unless explicitly initialised.

The first number in the list gives the value for *work_in[0]*, the second for *work_in[1]*, and so on. Sometimes in C listings you'll see fewer items in the initialiser list than there are elements in the array. In such cases, C initialises the surplus elements to 0.

The final new C language feature is contained in the odd-looking couple of lines:

```
if ((ap_id = appl_init())
== -1)
  return(FALSE);
```

This is a piece of shorthand that is frequently used by C programmers. The code is functionally the same as:

```
ap_id = appl_init();
if (ap_id == -1)
  return(FALSE);
```

It relies on a feature of C that can seem a little strange to those coming from a BASIC background. In C, assignment to a variable is not just an action, it's also a mathematical expression with a result.

The value of the result is the same as the value of the right-hand side of the assignment. As an example, the value of the assignment

```
total = 56;
```

is just 56. This means that wherever

we need a value, it is possible to put an assignment. Following on from the example above, if we had two variables that both needed initialising to 56, we could write:

```
total1 = total2 = 56;
```

In most other forms of this construct, brackets are needed around the assignment to make sure that it is done first. This is the case in the alert program: we need to call *appl_init()* to get a value for *ap_id* before we can test its value.

This feature is extremely useful, not just because it can save a line of typing, but because it allows some programming tasks to be written in a quite elegant way. See if you can work out what this fragment does:

```
while ((c = getchar()) != ESCAPE)
  printf("The ASCII code for %c is
%d\n",c,c);
```

TOOLING UP

In this tutorial you've seen how machine-specific features like GEM integrate into the C programming environment. You've also met the important programming concepts of portability and implementation-dependency, and had a first sight of a GEM program in C.

Next time we'll finish looking at the alert box program, and then go on to design a dialogue box interface for the backup-file purging program. To do this, we'll need an essential tool for developing GEM programs: a resource editor. Quite by coincidence, just such a beast, *K-Resource*, happens to be featured on this issue's cover disk! You've got a few weeks to learn how to use it...

THE LONG AND SHORT OF IT

You've already come across "long" which defines an integer type that may hold larger values than a standard "int". "short" is designed to store smaller integer values in a space-economic fashion. The trouble is that C does not lay down how big a number can be before it is too big for an "int", and so needs a "long"!

This decision is left to the programming team producing each individual compiler system. As a result, the size of an int varies from computer to computer, and from compiler to compiler on any given computer. The only guarantee that C makes is that a "short" will never be bigger than a "long".

Code that relies on a particular data type being of a particular size is termed **implementation-dependent**. In general, this is thought to be a bad thing, but it can be difficult to avoid, particularly when dealing with operating system interfaces. In this case, GEM needs to work with 16-bit integers, so the "short" type was used. The "int" type would have done just as well too, but would not have made the point!

To help you when looking at code, here is a comparison of the sizes of integers in *Prospero* and *Lattice* C (default configuration):

Type	Prospero C	Lattice C
char	8 bits	8 bits
short	16 bits	16 bits
int	16 bits	32 bits
long	32 bits	32 bits

```
#include <aesbind.h>      /* GEM AES function declarations */
#include <vdibind.h>      /* GEM VDI function declarations */

      .
      .
      .

/*
** The program starts here...
*/

void main()

{
  if (initialise_GEM() == FALSE)
        return;

  form_alert(1,"[1][|A GEM program written|in Prospero C !|][ Ok  ]");

  shutdown_GEM();
}


      .
      .
      .

int initialise_GEM(void)

{
  short work_in[11] = {1,1,1,1,1,1,1,1,1,1,2};
  short work_out[57];
  short physical_handle, dummy;

  if ((ap_id = appl_init()) == -1)
        return(FALSE);
  physical_handle =
graf_handle(&char_width,&char_height,&dummy,&dummy);
  handle = physical_handle;
  v_opnvwk(work_in,&handle,work_out);
  if (handle == 0)
        {
        appl_exit();
        return(FALSE);
        }
  VDI_active = TRUE;
  screen_width = work_out[0] + 1;
  screen_height = work_out[1] + 1;
  vq_extnd(handle,1,work_out);
  screen_planes = work_out[4];
  graf_mouse(ARROW,0);
  return(TRUE);
}


      .
      .
      .

void shutdown_GEM(void)

{
  if (resource_active == TRUE)
        rsrc_free();
  if (VDI_active == TRUE)
        v_clsvwk(handle);
  appl_exit();
}
```

FAST READING

Have you noticed QWK being mentioned in our list of Atari BBSs? Graeme Rutt explains all...

O ne way to use a bulletin board is to log on, read messages and reply to any that grab you, but spending less time on-line leads to a smaller phone bill! Off-line readers (OLRs) help in this aspect as they are programs that allow you to read and answer all your mail off-line at leisure. Only two short calls are required: one to download all new messages, one to upload any replies.

The most common OLR format is the QWK standard which is found on most Atari boards. There are several PD and shareware programs available – see the box for three of the most common.

WHAT IS QWK?

There are two sides to using QWK. The BBS you call·must be set up correctly to send and receive QWK mail and you must use an OLR to read and reply to mail. The BBS side is dealt with by using a standard terminal program.

If a BBS has access to a QWK mailer then it will probably be accessed either from the main menu

Internet's QWK system.

or the message/mail menu. The QWK menu will have a configuration option where you must make sure that you select an archive file format (ZIP, LZH or ARC) to use. It is also handy to set up the maximum number of messages to receive per message base. You could end up with a QWK file several megabytes in length if you don't!

You'll need to find out how your BBS' QWK mailer decides which message areas to include in your mail. The clever ones take the information from the areas you have toggled on and off in the BBS proper. Less intelligent systems make you toggle areas on and off inside its configuration system. Find out which system the BBS mailer uses and select the message areas you want.

The option to get your message packet is often called "Scan Packet" or something similar and it may take anything up to several minutes to create your mail packet. Follow any prompts – for instance, "Compress Packet?" and "Transfer Protocol" – to

Selecting an area in Captain's QWK.

create and download your new mail.

Once you've read your mail and replied to it, an OLR will create a .REP packet – a compressed file full of your messages in QWK format – to be uploaded. Redial the BBS, enter the QWK system and use a command such as "Upload .REP Packet" or "Upload Replies". Follow the prompts and upload the .REP packet.

In a nutshell, that's what QWK mailing is all about at the bulletin board end – now all you have to do is learn how to use one of the many QWK off-line readers and you'll be in business.

Reading messages with MicroTalk QWK.

IMHO's main selection screen.

ALL ABOARD!

Mark Baines with his fourth set of Atari-specific BBSs...

I'LL TRY THAT ONCE!

INFO: *Dial-in: 0453 765378 (Stroud)*
Sysop: Mark Taylor
Times: 24 hours
Speeds: Up to 14400 bps with V42bis
NeST 90:106/150
TurboNet 100:1051/0
FidoNet 2:251/35
AtariNet 51:501/150
FishNet 777:300/0
TrekNet 107:1701/20
VNet 46:9614/29
ByteNet 88:440/4
TechNet 111:440/8
ST-PD-Net 10:1/2

Running at 25MHz with a serial port at 38400 baud, I'll Try That Once is very slick and is in so many networks that you needn't go much further for all your comms needs. It supports all the major Atari networks and there are also eight on-line games including *Space Empire Elite*. Mark is keen to have any one set up as a point from him.

There is an exclusive Merlin PD Library File Area where callers can order the catalogue and both download and upload files. Mark is also helping develop the *WettWare* BBS system in conjunction with others in FishNet.

DIGITAL IMPULSE BBS

INFO: *Dial-in: 0555 772016 (Glasgow)*
Sysop: David Malins
Times: 24 hours
Speeds: up to 14400 bps with V42bis
NeST 90:105/6
TurboNet 100:106/2
FidoNet 2:259/64
AtariNet 51:501/154

Digital Impulse specialises in all types of Tracker music and has echoes for the Amiga and ST. There are five music style sections – ambient, electronic, metal/grunge, classical and rave/dance music. Each section has at least ten or more mods in them, most with around thirty files. There is also every Tracker program for the ST including the new eight channel Tracker for the STE.

As members of the main Atari networks, with plans to join more, and QWK mail OLR support there is something for everybody here.

ATLANTIS BBS

INFO: *Dial-in: 081-715 5420 (London)*
Sysop: Laurence McDonald
Times: 24 hours
Speeds: up to 16800 bps with V42bis
NeST 90:102/102
TurboNet 100:1011/16
FidoNet Awaiting address
AtariNet 51:502/3
PixNet Awaiting address

Atlantis specialises in all types of graphics especially SPX pictures and utilities, animations, rendering and demos although other areas are also strongly supported, such as utility, text and Falcon files. Archimedes, PC and Amiga areas are also available so you can keep up to date with what is happening there.

The PixNet network is mainly graphics orientated (with some sound) and carries a few message areas but its main strength is the number of files it carries with a high level of quality images.

Atlantis will soon become a multi-line/multi-user system with the addition of CD-ROM access to graphics libraries and other files. It already imports the major file echoes from Germany.

BLACK CAT BBS

INFO: *Dial-in: 0222 707359 (Penarth)*
Sysop: Mark Butler
Times: 24 hours
Speeds: Up to 14400 bps with V42bis
NeST 90:106/0
TurboNet 100:1051/1
FidoNet 2:251/27
AtariNet 51:501/0
VNet 46:9614/46.0

Mark has 500 message and 300 file areas regularly updated from AtariNet and NeST file areas, including Sdn, ADS, SKY, Clipper, Remote Access, Maximus, Windows, Novel and Geneology – so there is something for everybody on Black Cat. There is support for the Falcon and hardware such as Turbo 25MHz. Mark is currently testing a Turbo 33MHz for Atari Workshop!

Black Cat is also in STPDnet and is the SouthWest host for NeST and AtariNet.

BLACKWATER BBS

INFO: *Dial-in: 081-299 3933 (London)*
Sysop: Gordon Drayson
Times: 24 hours
Speeds: Up to 14400 bps with V42bis

Blackwater is a new and interesting BBS run by Brandt Fernandes Europe Ltd – the company behind Atari Workshop, System Solutions and Sumner Type.

Callers can leave messages relating to repairs or ask technical questions about Atari Workshop/System Solutions' software or hardware. The latest news and up-to-date information about products can be found, and even orders can be placed.

Blackwater BBS is not connected to any of the networks at the moment – let's hope that it will be soon.

LETTERS

TIMEWORKS TOO...

Your comments on the Next Month page of December's issue of a "usable" version of Timeworks 2 had my mouth watering. Having the "save" feature enabled led me to believe that what I was going to get was the full working version of the program.

The reality was very different. With GST's "watermark" across the page on every print out, the program is no better than a demo – so why didn't you label it as such? Last year's *Timeworks 1* program was a far better offer. To charge us an extra 50p for this rubbish is downright insulting.
Leo Vincent, West Midlands

You've raised two different points, Leo. The first is whether our cover disk version of Timeworks 2 is "usable". What we gave you was the full on-screen program along with a four-part series encompassing ten pages of tutorial to really allow you to "get into" DTP. The full Timeworks 2 package comprises seven disks! As for the GST watermark, this was mentioned in three places in the magazine including on the cover disk label itself. We certainly didn't try to hide the fact.
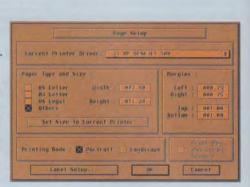
The increase in cover price wasn't for Timeworks 2 – we could have squeezed the program onto a single disk. It was to let us bring you a second cover disk packed with some of the best utilities currently available for the ST. You would probably need to buy four PD disks to get these programs, and the cost would be significantly higher than the extra 49p we added to the cover price.

As for the Timeworks 1 cover disk last year being a better deal, of course it was, as it was complete in all respects – and the unbelievably high price that had to be paid for the right to cover mount this was partly responsible for ST Review being canned by the previous publisher.

Why do you buy ST Review? Purely for the cover disk? If so, I'm failing in my job to bring you the best editorial coverage of any ST magazine. That Xmas issue had reviews of Protext 6, Chagall, the T Board, MiniS hard drives, the HiSoft upgrades, Outside and Photo Show not to mention over 15 pages of excellent tutorials on

everything from programming to working with a word processor...

Flying high – the Xmas cover disks included some superb utilities such as Let 'em Fly which gives you keyboard shortcuts in dialogue boxes.

HAPPY CHAPPY

First and foremost I must say that you are doing a great job with excellent content, information, Cover Disks and so on. Keep up the good work!

I have got an ancient STFM, TOS 1.02, single-sided internal drive... you get the picture? Anyway, I convinced my missus that I was in desperate need of some serious upgrading and checked out some offers in mags and some local hi-fi stores. We decided to try our local Currys (are you serious?) store. To our surprise there it was, a sparkling 1040STE, with Family Curriculum Pack 2. Could we stretch our budget to accommodate such a worthy piece of kit? I approached the assistant nervously. "How much?" I squeaked. "£149.99" was the reply. Well, you could have knocked me down with a feather! I hurriedly fumbled out the blue folding stuff, settled up, and quickly set off home. Needless to say I am one happy chappy!

The moral of this story is, that if you are considering purchasing a "sensible" computer, heed my tale of joy and happiness!

By the way, I would just like to thank the staff at Currys, Gants Hill, Essex, especially Elaine, for all their help. I know some companies come in for some stick (often justified) but they were great! Cheers!
Neill Kirk, Chigwell, Essex

You were in luck, Neill – the price of a 1040STE with Family Curriculum II should be £199!

Interesting to hear that you bought it from Currys, the more domestic appliance side of Dixons who, from my experience, tend to sell Amigas and games consoles by the bucket-load. Perhaps the recent price cuts have convinced some retailers that there is life in the ST market yet.

FATED FALCON

Whoa! Stop! Cease! Desist! The Falcon is a most wonderful piece of kit, on that we are all agreed. However, at the moment it is far too expensive.

My experience with the ST has taught me that the Falcon will be next to useless without at the very least, 4Mb of RAM and a hard drive exceeding 100Mb, which at £900 puts the machine out of my price range. I have invested a lot of time and money on software and hardware for my ST, which I am reluctant to give up without good cause.

The point of this letter is not to denigrate the Falcon, but merely to point out that I shall not be buying the machine within the foreseeable future. As such I am fed up with buying your magazine, which is supposed to be for the ST, with the occasional article thrown in for the Falcon. Enough is enough – let's get back to the ST, thank you very much.
D McGeachie, Mansfield, Notts

I couldn't agree with you more; the Falcon is too expensive despite the fact that the price has dropped by around £200 over the last few months. And yes, I also agree with your premise that 4Mb is the minimum memory required to get anything useful out of the machine. With 1Mb of RAM, the colour video memory requirements are too prohibitive.

But I draw the line when you intimate that ST Review is giving the Falcon too much coverage. In the past three issues, only seven editorial pages out of nearly two hundred have been dedicated to Falcon-specific programs – not a bad balance and probably in keeping with the ratio of STs to Falcons out there...

IRRITATING ICONS

What is this obsession with the icons that so pervade programs available for the ST? Until the user becomes familiar with these icons he or she is forced to refer to the instructions, and when different programs use differing icons the problem is only multiplied; it can be a nightmare for the casual user. Some icons are so finely detailed and complicated that even on my Atari SM146 monitor I am often unable to understand what they are trying to indicate. It would appear that a competition has developed among smart-arse programmers to develop ever more esoteric icons.

We do have a well proven and standard medium for communication in the language we read and speak. What is wrong with merely displaying the word or the words to indicate the nature of the function, as in *1st Word Plus*? This whole icon culture has a nasty smell of exclusivity and an amateurism which is all very well for the spotty herberts who like pretty pictures to adorn the few applications they may use between the life-wasting games they play, but for those of us who want to work in a more straightforward, professional environment it is a major irritation. I have spoken to a

number of people who use computers either at work or home and have found an overwhelming opposition to this iconism and exclusive dependence on the mouse, the latter of which often causes a hit or miss on closely situated function "buttons". Furthermore, I wish programmers would provide guidance via the <Help> key that so often sits redundant.
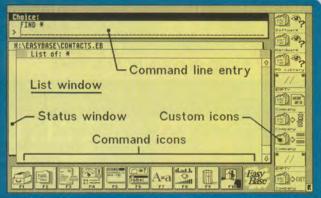
I was totally disappointed with *Easy Base*. I have tried out a number of databases in my search for something suitable and this has to rank among some of my worst. Not only was it full of incomprehensible icons, but it has an over-dependence on the mouse and it is not at all easy to use. The fact that one can backspace over field names is a blatant example of sloppy programming, appalling for a commercial package worth over £100. For all its faults, for now I'll stick with *ProData*.
I Bateson, Hanworth, Middlesex

The like or dislike of programs that use icons instead of, or as well as, drop-down menus is very much a subjective affair. There are good and bad examples and while I certainly disagree with you regarding EasyBase, I can accept your opinion.

Given the choice between a Command Line interface or mouse-driven menus, I'd go for the latter every time, and yet you, the readers of ST

Pretty pictures – do you prefer icons or a Command Line?

Labels: Command line entry, List window, Status window, Command icons, Custom icons

Review, voted Arnor's Protext as the Word Processor of the year. Let's be grateful that there is a good enough selection of ST programs to cater for all of our individual tastes and needs.

As for your comments about the <Help> key, you get no argument at all from me – and I would take the issue further. How about every text-based program using the <Delete> key to actually delete text? And why do we have to tolerate different keyboard shortcuts for each program – if they're supported at all? There again, if we had such a professional approach to programming on the ST, would we still have the plethora of excellent PD and shareware utilities?

£25 STAR LETTER

MORE SHAREWARE

First of all, I really like your magazine – it is almost perfect. It is a very good read and the commercial programs included are always excellent (and often the only way some users can afford them). *Easy Money*, *Flair Paint* and *Write On* are all very good (guess what I'm using now).

However, when you have a large commercial program, there is not much room on the disk for anything else, and while the programs may be good, they are not always useful to everyone. So why not add a second disk of PD stuff? This could complement the PD Zone, without being too much extra bother.
David White, Ealing, London

One problem of running a letters page is the turn around time between receiving a letter, using it and the final copy appearing in print. In David's case, his letter was written before our Christmas edition which, indeed, had two cover disks, the second jam-packed

with good PD and shareware, and the current issue has the likes of Selectric and Teradesk.
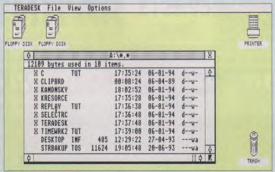
Viewed from a purely financial side, putting an extra disk on the cover should increase the price of ST Review by over 50p. My personal feeling is that four pounds is an awful lot of money to pay for any magazine, irrespective of the number of cover disks.

Letters is your forum. Do you agree with David? Would you like to see a second cover disk full of PD and shareware at the cost of an increased cover price? Drop me a line and we'll discuss this point further.
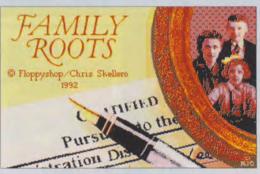
LADY IN WAITING

In the December 1993 edition of *ST Review*, Tony Kaye asked for letters from ladies who use computers.

A short time ago, my son bought a PC and gave me his old 520STFM which I use for Genealogy.

Branching out – Family Roots is just the ticket for family trees!

I purchased *Family Roots*, *Data Manager Professional* and *1st Word Plus*. All pretty basic you may say, but with my bronze-age brain cells (I won't see 49 again!) it's been an uphill battle trying to make sense of the manuals. However, I now know exactly what I am doing and am pleased with the results. Very soon I will have a brand new STE 1040 and will be able to get at the 1Mb goodies on your Cover Disks.

I do appreciate that most of the people out there are "computer literate" (Tony's Open House Column) but please don't ignore the learners – we are doing our best. Your magazine has been of great help to me – thank you very much.
Joan Edwards, Wallasey, Merseyside

Five years ago, I set up a consultancy on the back of a single MIDI sound module whose manual was totally incomprehensible, so you have my sympathies! As someone who has written the odd manual or two over the years, I also appreciate how difficult it

is for someone who knows the program inside out to "get down" to the level of a beginner.

Add the current financial restraints of letting someone spend, say, six months constructing an excellent manual along with the inevitable German to English translation and it is easy to see why we are inundated with many manuals that would have been better off remaining in their original tree-like state.

At ST Review, we realise that there are a lot of people out there like yourself who want to work with their ST but need help – and I have a distinct feeling that the majority of ST owners are not "computer literate" – hence our tutorials.

In this area, no other ST magazine comes close. We've just completed a six-part word processor series, are part way through working with DTP and about to start a set of Paint tutorials. If there are any other areas that you would like us to cover, please don't hesitate to drop me a line...

Super shareware – Teradesk is an excellent replacement desktop, and it's on this issue's cover disk!

New Software for a New Year
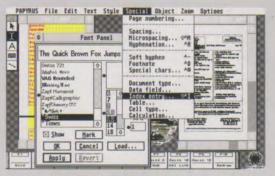
Business Applications

Atari Works

The comprehensive, up-to-date, integrated business package for any Atari 680x0 computer with 2Mb of memory and a hard disk. Atari Works contains a word processor, a spreadsheet and a database in one program, so that swapping between the applications is a piece of cake!

The word processor contains all the normal editing functions plus the drawing of lines & boxes, graphic import, spell checker and thesaurus, mail merge etc.

The spreadsheet is as powerful as many people will ever need - organise your data clearly and simply as text, percentage, fixed or floating-point or currency and then, using the 53 built-in functions, create interdependancies between your information. Then display the results graphically with pie charts, line graphs etc. and cut/paste these into the word processor!

The database is a joy to use; create as many fields as you need and position them on your form using the mouse. Once the data has been entered you can sort it, match records, find specific entries and produce reports, all quickly and simply. It is easy to import data from other databases and export data for use with the mail merge facility of the word processor.
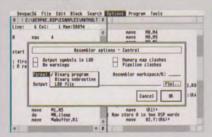
All modules support the new SpeedoGDOS and are fully integrated - Atari Works is probably the most powerful integrated package yet seen on the Atari computers.

Papyrus

If you need a high-end word processor with many desktop publishing features then Papyrus is the new package for you.

The application is ideal for producing all types of professional-looking output, from one-page flyers to complete manuals. With extensive SpeedoGDOS support, paragraph styles, headers, footers, footnotes, reliable undo, automatic table of contents, flexible zoom, index creation, full margin control, freely adjustable paper format, letter micro-spacing, GEM vector import, text flow around objects, master pages, RTF support and more, Papyrus is the premier choice for all serious writers and designers.

Programming

DevpacDSP

Another new programming package joins the HiSoft family of languages for the Atari 680x0 computers. DevpacDSP is a complete development system for the Motorola 56001 digital signal processor used in the Falcon030.

Remember that we've also updated our other programming languages for the Falcon. Devpac 3.10, Lattice C 5.60 and HiSoft BASIC 2.10 all contain extra libraries/include files for the Falcon, an extended debugger that works in all Falcon resolutions and much more. The *Modern Atari System Software* book (free with Lattice C 5.60) gives full Falcon developer documentation.

DevpacDSP consists of a fast 56001 assembler, fully integrated with our friendly GEM editor, which supports macros, conditional assembly, include files and direct production of .LOD files or Falcon binary plus an easy-to-use GEM-based debugger for disassembling and stepping through your code, modifying registers, setting breakpoints etc.
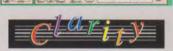
Video/Music

VIDEOMASTER

The best-value real-time video digitiser you can buy. VideoMaster is available for the ST/STe and, in a special enhanced true colour version, for the Falcon. VideoMaster RGB includes our new colour splitter, ColourMaster and produces amazing quality colour stills.

Clarity

Clarity is our latest sound sampling system for the Falcon. Featuring an extensive sample editor, a complete drum sequencer and a powerful MIDI controller, Clarity is an ideal companion for all musicians. Includes extra hardware for CD (44.1KHz) and DAT (48KHz).

Utilities

HARLEKIN 3

This popular collection of utilities for all Atari computers gets another facelift. Harlekin 3 contains a multitude of enhancements including a multi-file editor, a new communications module with a scripting language, support for high density disks, a new Alarms module, for use with the Manager, separate keyboard and font editors and much more. The whole package has a new look, with all modules in a window or a flying dialog so that they can be moved and the memory configuration is now even simpler. Upgrades from Harlekin 2 cost only £19.95.

All products on this page are either available now or by the end of January '94 - please call to confirm availability.

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